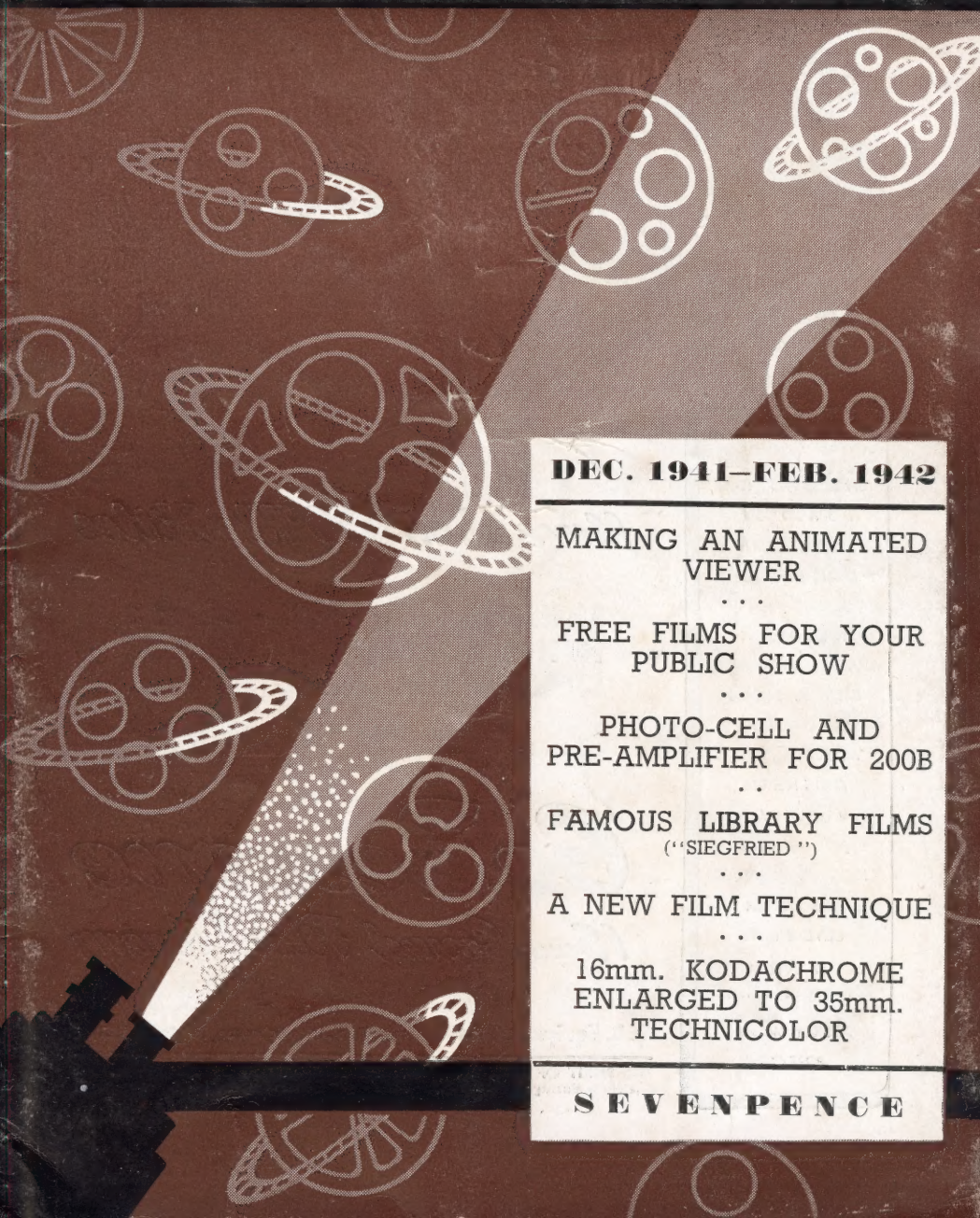
AMATEUR CINE WORLD



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AMATEUR CINE WORLD

Incorporating "Miniature Camera World"

DEC., 1941—FEB., 194 2

VOL. I. No. 5

(*Old Series, Vol. VIII, No. 8*)

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AMATEUR CINE WORLD is published quarterly from 324, Gray's Inn Road, London, W.C.1 and will be sent to any part of the world for 2/10 post paid (four issues).

GORDON S. MALTHOUSE, *Editor*

Substandard Shows the Way

IN this issue we publish what we hope will prove a very useful feature : a detailed list of sources from which films can be obtained on free loan, provided they are shown to audiences of a reasonable size. Chief of these libraries is the Central Film Library which, in addition to much other activity, provides the programmes for the seventy travelling road shows organised by the Ministry of Information.

These shows are a notable development in the use of the non-theatrical film. People go to the cinema to be entertained ; any instruction that can profitably be given must therefore be of a popular, easily assimilable nature. The M. of I. itself presents a non-theatrical film in each programme, but realising the uselessness of giving instruction in other than small doses, limits its films to a running time of about five minutes.

The mobile film unit carries on where the cinemas leave off ; it has demonstrated that, while the ground can be prepared and the seed sown in the cinemas, the crop is harvested through presentation of the instructional film to selected audiences—audiences who share a common interest, be they institute, factory workers or club in town, village or hamlet.

This carefully planned exploitation of the non-theatrical film is a direct result of the war, but it teaches lessons which should be of great value in the peace. It cultivates the individual. And since this is what the amateur has been doing for years, he has a special interest in what is being achieved. Further, he is himself in a position to play a vital part in this work. He can give his own shows of films with a purpose. The substandard gauge is the standard of the road show, and a wide variety of films is available.

It he has contacts with the same types of audience as those visited by the M. of I. units, then he can show the same films as those units. And if he confines himself mainly to screening entertainment films for the Services, he will be able to ease the demands on his pocket, while ladling out a little palatable instruction, by obtaining the loan of the many first-rate films listed in this issue, and screening them as supporting pictures.

The projector to-day is no less a weapon than the tommy gun, whether it be used to disseminate ideas, create a cultural background, provide instruction or afford relaxation. The authorities need far more substandard machines than are at present available. If, therefore, the amateur can spare the time to give shows outside the family circle, he will be performing a notable service.

FROM time to time readers expecting to be called up write to us to ask if there is any prospect of their being able to join a unit in which their knowledge of amateur cinematography could be utilised. In most cases we have had to give a negative reply. But now it seems that the War Office, spurred on by the Ministry of Information, is beginning to realise the value of the camera, both still and cine, as an instrument of war.

Plans are afoot for the formation of a special corps of photographers, for which expert amateurs who work on 16mm. will be eligible for consideration. In conjunction with the M. of I., the Royal Photographic Society is preparing a list of photographers and cinematographers who have the necessary qualifications.

Readers who are already in the Army or expect to receive enlistment papers soon, and who are entitled to regard themselves as thoroughly expert, should therefore forward their name and address to the R.P.S., who will pass them on to the M. of I. Address : the Secretary, Royal Photographic Society, 16, Princes Gate, Kensington, London, S.W.7.

Readers who have friends in the Army who are expert movie-makers can assist by sending their names to the R.P.S., but it should be noted that only those amateurs with very wide experience and skill are likely to prove acceptable.

THE SPRING ISSUE OF "AMATEUR CINE WORLD" WILL BE ON SALE MARCH 2

Photo-Cell

¶ The conversion of the 200B to sound, described in our last issue has evoked widespread interest and approval. Our contributor dealt principally with the mechanical and optical sections of the sound head. In this concluding instalment he discusses the photo-electric cell and slit, and pre-amplifier.

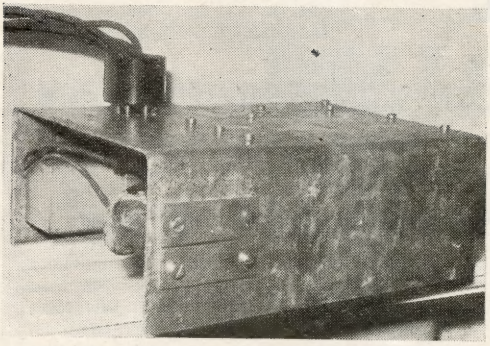


Photo A. Showing P.E.C. unit and the cell on the left wrapped in insulating tape

IT would seem from the letters I have received from readers interested in the conversion of the 200B (described in the last issue of *A.C.W.*) that the pre-amplifier offers the chief difficulty. The design of this is very flexible and at the present time, due to the valve shortage, is directed by the types of valves one can procure. The power amplifier following the pre-amplifier may either be the gramophone amplifier (which some readers may already possess for providing sound-on-disc accompaniment to silent films) or the L.F. section of a good modern radio set, capable of giving at least 2-3 watts undistorted output.

Both the amplifiers require an input of the order of 1 volt R.M.S. fully to load the output valve. Now, as the photo-cell output is much less than this, it must be amplified before the power amplifier can deliver its maximum output. Hence the reason for a pre-amplifier. Also, as the cell output is so small, it will be appreciated that external factors (e.g., electrical radiations from neighbouring wire leads, transformers, motors, etc.) might easily be picked up by the leads from the photo-cell to amplifier.

These, being of the same order of magnitude as the required signal voltage, will interfere with, if not completely obliterate the required sound. For this reason the photo-cell and a small pre-amplifier are incorporated in a single unit inside a metal box which, when earthed, screens the cell, etc., from external radiations. The output of this unit is then led to the main amplifier via screened leads.

The complete unit can be built into a metal box about 7″ x 6″ x 3″. Photos A and B and Fig. 1 show the unit, together with the adjustable slit. This slit consists of two pieces of brass about $1\frac{1}{2}$″ x $\frac{1}{2}$″ x $\frac{1}{16}$″, both slotted as shown (see Fig. 6). A fairly wide slot (indicated by dotted outline in Fig. 1) is cut in the side of the metal chassis and the brass plates bolted so that they can, when suitably adjusted, reduce this to a very narrow slit. The two edges of the plates forming edges of the slit must be made true by first using a fine file, then fine emery

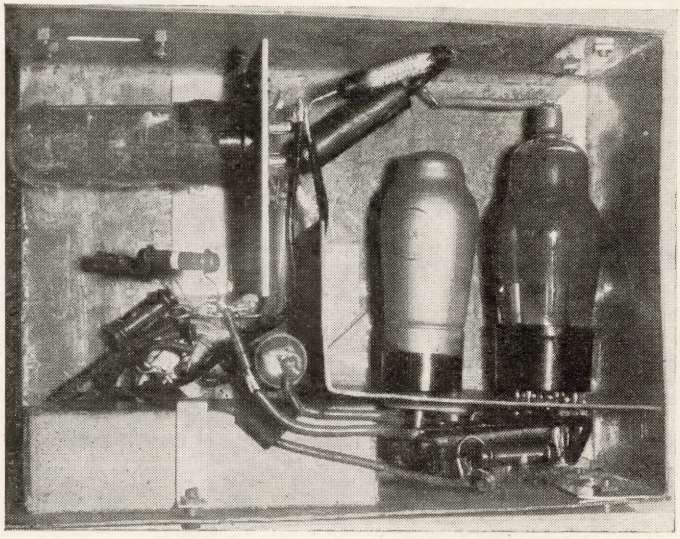
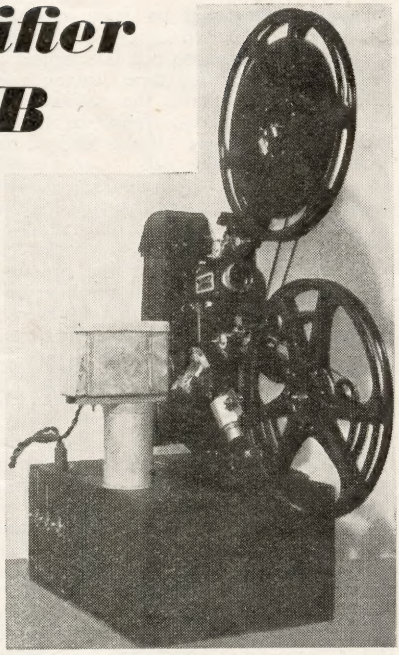


Photo B. P.E.C. unit, showing cell and two-stage pre-amplifier.

and Pre-Amplifier for the 200B



The complete set up. Note exciter lamp on rotating turret.

paper and finally finishing off on a smooth, level oil-stone.

The slit width is set to the correct width by means of feeler gauges. The following formula gives the relation between S, the slit width ; F, the maximum frequency response in cycles/sec. and M, the magnification of the sound track projected upon the slit :—

$$F = \frac{3.6M}{S}$$

e.g., if we stipulate that the frequency response must be level up to 5,000 c/s. and fix the magnification as x 10, then as

$$S = \frac{3.6M}{F}, \quad S = \frac{3.6 \times 10}{5{,}000} = .0072'' \simeq .007''.$$

Figs. 2, 3 and 4 show three typical pre-amplifier circuits. Fig. 2 circuit (the one I am using) employs two valves, one a high amplification triode H.42, the other a normal low impedance triode, HL4+. The second amplifier circuit shown in Fig. 3 utilises a single HF pentode, employed as an audio frequency amplifier. The component valves indicated are for the Tungsram valve EF6. The third circuit is really the previous one

By

R. W. HALL, B.Sc.

followed by a stage of amplification using the triode valve HL4+ (Fig. 4).

Let us call them circuits 1, 2 and 3 respectively. Circuit No. 1 has a gain of about 2,000, while No. 2 has a gain of about 160 only. Thus, if the use of a radio set as power amplifier is contemplated, I should advise construction of a pre-amplifier employing two valves on account of the higher gain obtained. Circuit No. 2, however, is suitable for use with existing high gain amplifiers. With the addition of a triode amplification stage (Circuit No. 3) the gain is increased to 4,000. This makes the circuit suitable for use with low gain power amplifiers and radio sets.

Apart from the facts mentioned above there is little difference between the performance of the three amplifiers, and the reader will, of course, construct the one which is best suited to his resources. If different makes of valves from those specified are used it will probably be necessary to modify slightly (in accordance with the valve makers' instructions) certain component values. Actually, in substituting one make of valve for another of similar type, the only components which may possibly have to be changed are the anode load resistance and the cathode bias resistance.

Now a word about the actual construction of the amplifier. Photos A and B show the layout of my own. This type of construction permits of the unit being fairly compact. Actual details will, of course, vary according to which circuit is used, and it rests with the constructor to use the type of layout best suited to his own particular needs. However, the following points should be observed no matter what layout and circuit are employed :

1. The lead between photocell anode and grid of the first valve should be as short as possible and away from any A.C. valve heater wiring in the chassis.

2. The cell itself should be screened by a metal box or can (the screen has been removed in the photograph to show the method of cell mounting). An old wireless coil can is very suitable provided a slot is cut in it to permit passage of light to the cell. The screen should be earthed to the

chassis. (This will be done automatically if the can is bolted to the cell supporting bracket). The photo cell is wrapped round with black insulating tape (leaving a gap to allow light to reach the cathode). This prevents any stray, reflected light rays reaching the cathode. It also tends to prevent microphony in the cell. Care should be taken to mount the photocell so that its anode does not obstruct light passing through the slit and so prevent it from falling on the cathode surface. Fig. 7 shows this clearly.

The power supply for the pre-amplifier is obtained from the main amplifier or radio set. There will be in all, five leads from the preamplifier to the power amplifier, namely : (1) The output lead (which should be of screened cable). (2) The negative or earth lead which goes to the main amplifier chassis. (3) and (4) the two L.T. heater leads. (5) The HT lead. The HT and LT supplies are obtained by tapping appropriate points in the power amplifier. If, however, the valve heaters in the pre-amplifier are of different voltage to those in the radio set or power amp. (e.g., the EF6 is a 6.3 volt valve, whereas most radio sets employ 4 volt valves) then a separate filament transformer of suitable voltage must be employed.

The best way of connecting up these five leads is to fix a seven-pin valve-holder to pre-amplifier chassis (see Fig. 1) suitably wired. Then solder the ends of the five leads to the appropriate pins of a seven-pin plug (an old valve base serves admirably). The output lead is simply plugged into the positive (i.e., unearthed) pick-up socket of the radio set, and its screening earthed.

On completion, the pre-amplifier is connected up and tested by holding a lamp connected to the A.C. mains in front of the slit. If all is in order a loud hum will be heard in the loudspeaker, which will be stopped by holding an opaque object between the lamp and slit. This tests the photo-cell, while the pre-amplifier and the main amplifier can be best checked on sound by using them in conjunction with a gramophone pick-up. There should be a volume control across the pick-up terminals to reduce the output to the pre-amplifier, otherwise serious distortion will occur from overloading of the valves. One pick-up lead goes to the grid of the first valve in the pre-amplifier and the other to earth. If the output is distorted, the amplifier must be examined and the fault located before one proceeds to the crucial test, i.e., a trial of the whole system on sound-on-film.

Figure 5 and photo C show my own set-up. The projector is mounted on a wooden box which houses the exciter transformer and also the auxiliary synchronous motor which I use instead of the standard AC/DC motor. The photo cell unit is supported on brackets attached to the front of the wooden box. The pre-amplifier has been designed so that it can be used at various distances from the projector, i.e., so that the sound track can be magnified to a varying degree, up to about x20. The sound track width is .071 cm., so that a magnification of x20 gives an image of 1.42 cm. width on the slit.

I find, however, that the best results are obtained with as short a throw as possible consistent with reasonable magnification of the sound-track. The optimum throw with my particular 40mm. lens is 16", when the track is magnified about 7 times. Then, using a slit of .002" width, extremely good reproduction is obtained.

In preliminary tests the reader will find the optimum throw for best results. But for a start the pre-amplifier is set up so that the slit is about 16" from the sound track projection lens, and tilted so as to be in line with the axis of the lens (see Fig. 5). The sound film is threaded up (emulsion away from the screen, remember !) and the projector started up at 24 f/s. The exciter lamp is then switched on and adjusted as previously described. The projection lens is now set so as to focus a sharp image of the track on to the slit (see Fig. 6).

Extraneous light from illuminated parts of the film outside the sound track area must be prevented from reaching the photocell. This can be done by masking the slit with two pieces of sticky tape, as shown in Fig. 6. Then, if all is correct and the two amplifiers switched on, the sound accompanying the film will flow forth from the loudspeaker. Slight adjustment of the projection lens can then be made till the quality of reproduction is at its best. A slight alteration in the pre-amplifier tilt may increase the volume of sound. When the optimum position of the unit is found it can be permanently fixed in position by the means already indicated.

It may be found that the sound is marred by crackles and interference from the AC/DC motor. If this is the case, everything should be screened (as far as possible) and suppressors will have to be fitted to the motor. Two $\frac{1}{4}$ microfarad condensers in series across the two brushes, with their centre connection earthed, will probably ease the trouble. A motor which sparks badly at the brushes is bound to cause interference ; they should be adjusted to give a minimum of sparking. If these measures are not successful and if the motor does not interfere with the main amplifier

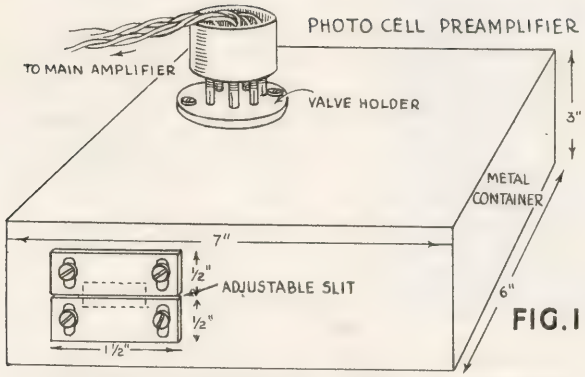


FIG. 1.

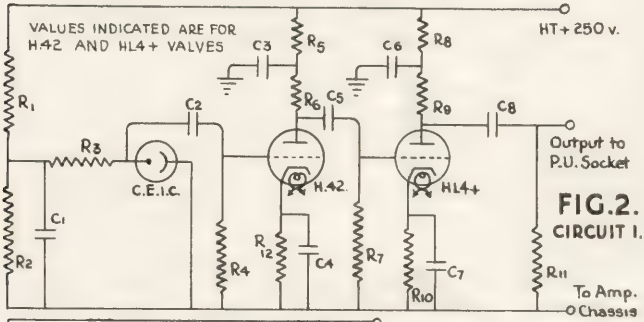


FIG. 2. CIRCUIT 1.

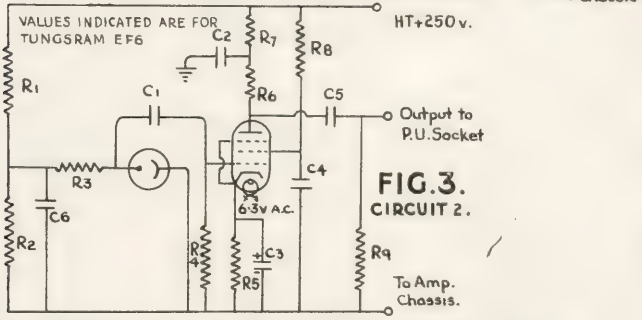


FIG. 3. CIRCUIT 2.

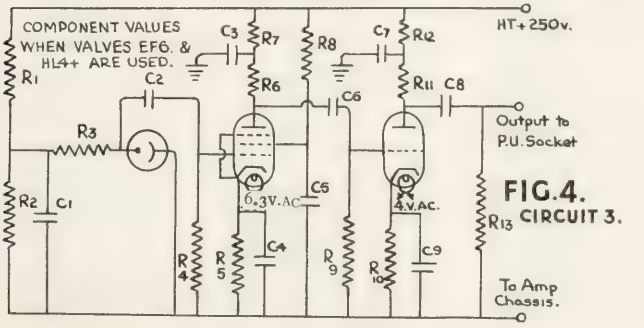


FIG. 4. CIRCUIT 3.

KEY TO CIRCUITS

CIRCUIT 1 (Fig. 2)

	Ohms	Watt.
R_1	150,000	1
R_2	100,000	1
R_3	500,000	½
R_4	1,000,000	½
R_5	100,000	1
R_6	250,000	1
R_7	500,000	½
R_8	30,000	1
R_9	50,000	1
R_{10}	1,000	1
R_{11}	1,000,000	1
R_{12}	2,000	1

C_1 = 8 mfd. 200 v. wkg.
C_2 = .01 mfd.
C_3 = 8 mfd. 400 v. wkg.
C_4 = 25 mfd. 12 v. wkg.
C_5 = .1 mfd.
C_6 = 8 mfd. 400 v. wkg.
C_7 = 25 mfd. 12 v. wkg.
C_8 = .1 mfd.

CIRCUIT 2 (Fig. 3)

	Ohms	Watt.
R_1	150,000	1
R_2	100,000	1
R_3	500,000	½
R_4	1,000,000	½
R_5	5,000	1
R_6	300,000	1
R_7	100,000	1
R_8	750,000	1
R_9	1,000,000	1

C_1 = .01 mfd.
C_2 = 8 mfd. 400 v. wkg.
C_3 = 25 mfd. 12 v. wkg.
C_4 = .1 mfd.
C_5 = .1 mfd.
C_6 = 8 mfd. 200 v. wkg.

CIRCUIT 3 (Fig. 4)

	Ohms	Watt.
R_1	150,000	1
R_2	100,000	1
R_3	500,000	½
R_4	1,000,000	½
R_5	5,000	1
R_6	300,000	1
R_7	100,000	1
R_8	750,000	1
R_9	500,000	1
R_{10}	1,000	1
R_{11}	50,000	1
R_{12}	30,000	1
R_{13}	1,000,000	1

C_1 = 8 mfd. 200. v. wkg.
C_2 = .01 mfd.
C_3 = 8 mfd. 400 v. wkg.
C_4 = 25 mfd. 12 v. wkg.
C_5 = .1 mfd.
C_6 = .1 mfd.
C_7 = 8 mfd. 400 v. wkg.
C_8 = .1 mfd.
C_9 = 25 mfd. 12 v. wkg.

FIG. 5. THE COMPLETE SOUND SYSTEM IN ACTION

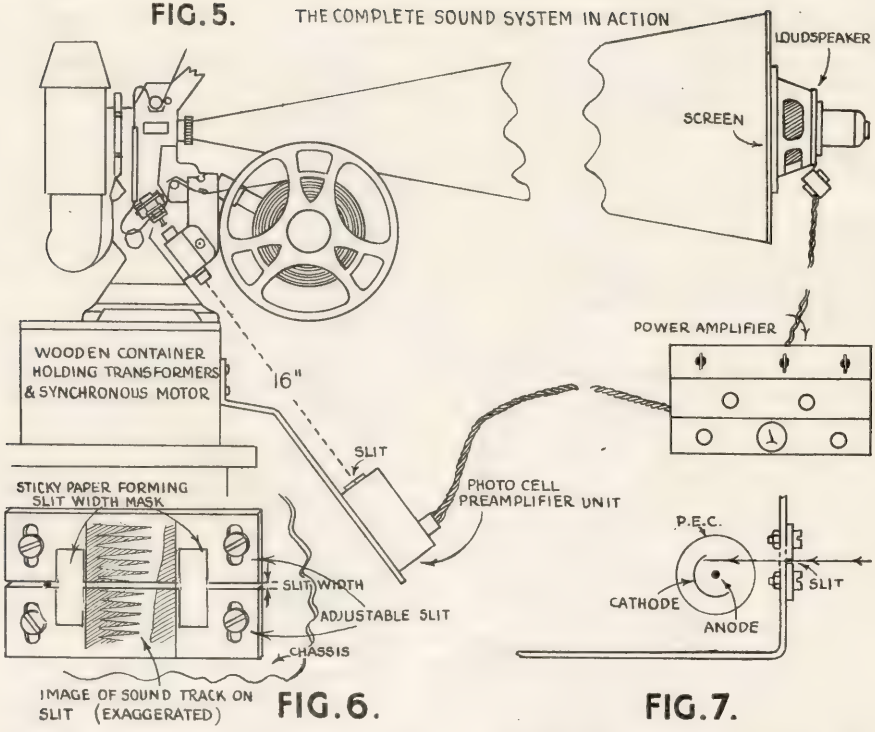


FIG. 6. FIG. 7.

alone, then a battery-operated pre-amplifier will probably eliminate the trouble.

In projecting feature films it is occasionally necessary to make volume adjustments. If the amplifier is some distance away from the projector it is convenient to have some means of controlling the volume, on the projector itself, to avoid constant running between the amplifier and projector. A variable 0-3 ohm resistance in the exciter lamp circuit is an excellent volume control and also lengthens the life of the exciter lamp.

This concludes details of the basic sound system, but I should like to mention a few points illustrating lines on which the reader, desirous of improving the performance of his 200B still further, might work :

(1) Design of gate could be modified to permit removal or insertion of the film at any point in its run.

(2) Use of a synchronous motor for projector drive. This provides a *constant* speed drive with *no* electrical interference.

(3) Inclusion of a heavy flywheel in the driving system.

(4) Construction of a projector "blimp" to cut down projector noise. (This is almost a necessity when using the projector in a small room).

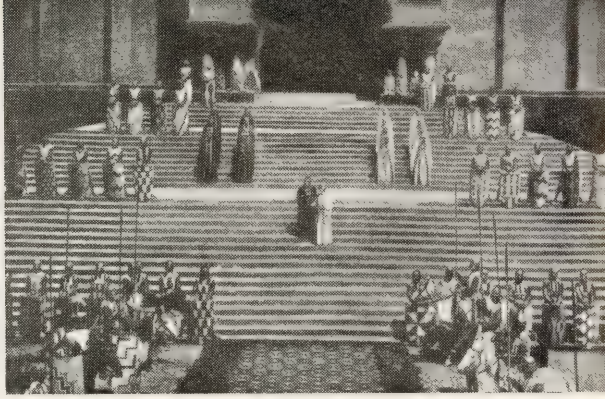
And now it only remains for me to wish all success to those readers intending carrying out this conversion. I should be glad to hear of their results, both with the 200B and other projectors.

AN URGENT APPEAL

"Send for catalogue, post free." Almost every *A.C.W.* reader must have accepted that invitation many times. It is pleasant to study the specifications of this model and that, and weave daydreams of proud ownership round them. But it is a long time since you looked through all those catalogues. You have no use for them now. You have no real use for those old newspapers, periodicals, books.

A.C.W. urges you to clear out *every scrap* of waste and make it serve the national effort. The need is urgent. 25,000 tons of shipping is employed in bringing paper across the Atlantic. If we can collect the waste in this country, that tonnage can be diverted to carry munitions to Russia. Waste paper is used, too, to make those munitions: cartridge and shell cases, mines, radio sets (every tank has a radio), machine gun belts and even wall boards for army huts.

Space in *A.C.W.* is very limited these days, but we are quite sure we have never used so little of it to better purpose than in reminding you of this urgent necessity. **Please play your part *now*.**



The Cathedral steps: note the studied symmetry.

FAMOUS LIBRARY FILMS: No. 11

"Siegfried"

A CRITICAL COMMENTARY

BY

H. A. V. Bulleid, M.A.

"For sheer pictorial beauty of structural architecture, *Siegfried* has never been equalled for no company could afford to spend money as did Decla-Bioskop in 1922-23 . . .

Siegfried was far from being pure film, far from the naturalism of the Soviets or the individualism of Pabst, but it was restrained, simplified pageantry, rendered with a minimum of decoration to gain the maximum of massed effect. Who can forget the tall, dark forests; the birch glade, bespattered with flowers where Siegfried was slain; the procession of Gunthur's court, seen distantly through the mail-clad legs of the sentinels; the calm, silent atmosphere of the castle rooms, with their simple heraldic decoration; and above all, the dream of the hawks . . .

THIS summary by Paul Rotha in "The Film Till Now," accurately conveys the greatness and implies the weakness of a film which will remain a landmark in the history of large-scale screen spectacle, and for which Fritz Lang did in fact create in the studio a complete replica of the peoples and palaces of the Nibelungen Saga.

Production	Decla-Bioskop, Berlin, 1923.
Trade Review	May, 1924.
English Release	November, 1924, under title *The Nibelungs*.
Length	9,000 feet, approx.
Directed by	Fritz Lang.
Scenario	Thea von Harbou.
Photography	Karl Hoffman, Gunthur Rittau.
Design	Otto Hunte, Karl Vollbrecht, Erich Kettlehut.
Derivation	The Nibelungen Saga (Part 1).

The Leading Characters in their order of appearance:

Paul Richter	as Siegfried, son of Siegmund.
George John	as Mime, the Armourer.
Margarete Schoen	as Kriemhild, Princess of Burgundy.
Theodor Loos	as Gunthur, King of Burgundy.
Hans von Schlettow	as Hagen Tronje, his Counsellor.
Bernhard Goetzke	as Volker, the Minstrel.
Gertrude Arnold	as Queen Ute.
George John	as Alberich, King of the Nibelungs.
Hanna Ralph	as Brunhild, Queen of Eisenland.
Substandard Availability	Pathescope Library, 4 S. reels of 9.5mm., equivalent to about 4,000 feet of 35mm.

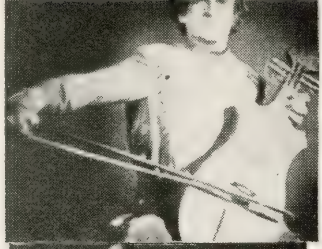
The realism is profound, but it is the sets and the masses that fill the screen; and so crowded out are the human emotions that the characters never come to life—just as they remain in legendary remoteness in the book ("The Nibelungleid," by Vilnar). This is accentuated in the available version, where most of the pruning has been at the expense of the more intimate shots; but none the less Fritz Lang's typical disinterestedness in the human angle is marked.

Siegfried had its première at the Albert Hall, and was released contemporarily with several famous films: spectacles (*The Covered Wagon, The Hunchback of Notre Dame, Sodom and Gomorrah*—by Michael Courtice, an Austrian film), comedy (Lloyd's *Girl Shy*, Keaton's *Sherlock Junior*), and heavy (Pola Negri in *The Spanish Dancer* and Gloria Swanson in *Zaza*), not to mention Douglas Fairbanks Junior's first film, *Stephen Steps Out*.

The American film had at this time already established its domination, though the German company, subsidized, had unlimited capital to spend in competition. The Americans were, however, cinematic; whereas strong theatrical elements marred the German product until late 1924. Moreover, the sombre tones and intellectuality found disfavour compared with the American cult of slick brilliance.

The following list of sequences in the available version will show how the narrative has been constructed: the rather episodic tendency is largely due to the condensation.

1. Siegfried forges a sword, and hears of Kriemhild.
2. A glimpse of Worms castle, and Kriemhild.
3. Siegfried leaves the armourer's cave.
4. Siegfried meets and kills the dragon, bathes in its blood.
5. A minstrel at Worms castle informs Gunthur and his court of the above.



Above: The death of Siegfried in the birch glade. Top right: Bernard Goetzke (who had leads in "Destiny" and "Last Days of Pompeii) as the Minstrel; Bottom right: Paul Richter as Siegfried—a shot which shows the film's only anachronism.

6. Siegfried meets and overpowers Alberich, King of the Nibelungs.
7. Alberich shows Siegfried the Nibelungen treasure, but dies for treachery.
8. Siegfried arrives at Worms, asks Kriemhild's hand, agrees to help Gunthur in his aim to make Brunhild his wife.
9. Brunhild introduced in her castle surrounded by a lake of flames.
10. Siegfried and Gunthur approach and enter, meet Brunhild.
11. Brunhild matches her prowess against Gunthur, but he is assisted by Siegfried, and she is defeated.
12. Triumphal return to Worms.
13. Double marriage in cathedral.
14. Siegfried subdues Brunhild on the bridal night, removing her bracelet.
15. Kriemhild finds this bracelet.
16. Siegfried explains to her its source.
17. Brunhild belittles Kriemhild; who in anger produces the bracelet: and Brunhild, saved from suicide, demands Siegfried's death.
18. Hagen enquires as to Siegfried's one place of vulnerability.
19. Brunhild continually demands of Gunthur that Siegfried be killed.
20. Kriemhild embroiders a cross to indicate Siegfried's vulnerability.
21. Hagen practises with a sword.
22. A hunt is called in the forest.
23. Kriemhild, troubled by a dream, begs Siegfried not to go.
24. In the forest, Hagen challenges Siegfried to a race to the spring; but runs instead to a high crag whence he kills Siegfried.
25. Brunhild hysterically taunts Gunthur with murdering his friend: Kriemhild awakes, finds Siegfried's body, swears vengeance on Hagen.
26. Siegfried lies in state: and Brunhild has taken her own life.

* * *

The film opens with the studio-built exterior of Mime's cavern: then, within, are introduced Siegfried with god-like appearance and Mime, his mentor. The arrangement is properly cinematic, appropriate action carrying the narrative through the introductions. The perfection of Siegfried's skill is well shown by the action of the sword severing a falling feather. The cavern interior is lovely in detail (such as the fire and the quenching trough and the leather bellows, pumped with Langish gesture, and the two weak shafts of "sunlight").

Old Mime gives a trace of sorrow to his admiration of Siegfried's skill, an excellent touch but unusual for Lang. George John makes Mime a memorable figure, a fine achievement in so minute a part. Outside, a gnome speaks of Kriemhild: Siegfried listens, holding his fine white horse. We see a back-lit long shot of Worms, a bold conception of light and shade. One shot of Kriemhild taken from behind a line of guards throws back at the audience the whole vastness of the castle pageantry. Shots in the cathedral, including a close-up of Kriemhild, complete the sequence. The gnomes deride Siegfried's decision to win Kriemhild: and Mime points grimly into the distance, suggesting the perilous quest . . .

The dragon is introduced by an iris-in, the point of the iris being at the lower right hand corner of the screen so that the head only of the dragon is seen at first. This useful device, the ex-centric iris, is now considered obsolete, an anomaly in a period when cavorting cameras with obtrusive personalities are in vogue. The next shot is one of the finest studio creations ever: the

huge forest—one vast composition of verticals —with sunlight making a fascinating diagonal splash, through which Siegfried and his white horse picturesquely wend.

The dragon was a full-size studio property manufactured from steel and rubber, weighing one and a half tons, and 70 feet in length, controlled by 32 men. From the first Langish long shot of Siegfried, sword raised, leaping down towards the dragon, the fight is a slick assembly of well chosen shots, including a gruesome 16-frame close-up of the blinded eye. The sequence fades out on a boldly-composed medium close-up of Siegfried's back, linden leaf on shoulder, under the dark blood of the dragon.

After introductory title, Gunthur is shown in a finely posed mid-shot, which shouts his characteristic weakness and indecision. Mid-shot followed by close-up introduce Hagen, his missing right eye exemplifying brutal villainy. Then a low-angle shot shows the Minstrel, singing of Siegfried's progress. These three were famous character actors : Gunthur is Theodor Loos of *Metropolis* and the Minstrel is Bernhard Goetzke, who had leads in Lang's 1921 *Destiny* and Carmine Gallone's 1926 *Last Days of Pompeii*, with Maria Corda and Victor Varconi, an Italian spectacle.

"*Led by the Birds, he has entered the Nibelungen Kingdom to win a wondrous treasure.*" So concludes the minstrel : and white mist rolls away across the screen to reveal another set of sinister beauty : the dark valley with rising mist and gaunt tree, and the lurking figure of Alberich. This

Theodor Loos as Gunthur.

latter is lit too crisply to match correctly. When Alberich unfolds his net, he vanishes. This is too sudden, and the explanatory title too laboured : better is the *fading* away of the person behind the net, as done later in the film.

Siegfried cleverly acts the fight with the invisible dwarf, but the re-appearance also is not 100 per cent. correct, the high-angle shot of the last throw being held two frames too long before Alberich appears. General slickness, however, glosses over these errors at first viewing. Alberich begs forgiveness in a pleading high-angle close-up recalling the same player at the machine in *Metropolis*. Finally, with Langish gesture, he leads Siegfried from the valley in a full long shot : the mist has swirled higher . . .

Down a deep rocky chasm, and into a dark cavern wherein the moonlight weakly struggles, Siegfried follows Alberich. They pass into another cavern, filled with strange shapes and still water. Alberich lights the way with a luminous sphere. A ring of dwarfs bear a huge plate of jewels. Alberich conjures a vision of his workers forging a vast crown. Then, among the jewels is shown *Balmung*, the famous sword : and while Siegfried's attention is diverted, Alberich attempts to kill him : but . . .

a. L.S. Siegfried turns, raises his sword . . .
b. M.S. (detail) Siegfried's legs strain . . .
c. C.S. One of the dwarfs, uneasy.
d. M.S. (as b) Alberich's crown falls to the ground: Alberich falls.
e. CM.S. Siegfried stands back.
f. L.S. The same : dark background : Alberich at his feet.
g. CM.S. Alberich : his luminous sphere flashes, under his hand : he says
h. TITLE "*People of the Nibelungen, return to stone.*"
i. CM.S. (as g) His hand covers his heart.
j. L.S. (as f) Siegfried looks down at him.
k. M.S. The dwarfs supporting the plate : they turn to stone.
l. L.S. Siegfried stands back in wonderment.
m. CM.S. Alberich has turned to stone.
n. L.S. (as l) Siegfried holds aloft the sword. Slow iris out—the iris closing at the top of the frame, on the handle of *Balmung*.

This excellent arrangement of shots concludes a fine sequence with a dramatic intensity seldom bettered by Fritz Lang : completely loosing the hampering chains of theatrical presentation, his best cinematic instincts came to the fore with outstanding results. The restrained beauty of the cavern sets is also admirable. There is an interesting Langish link with *Metropolis* ; the sphere in shot (g) is comparable with the lights on the machine Freder works in the Machine Room.

A low-angle long shot shows Siegfried with his escort of vassal Kings on the drawbridge of Worms : Hagen dissuades, but Gunthur welcomes "the son of Siegmund." Then the massive doors are opened (their mammoth solidity is really impressive) and they enter. Siegfried slowly approaches Gunthur—impressively, in high-angle long shot. He asks Kriemhild's hand : Hagen interposes the suggestion of aid in Gunthur's journey to Brunhild, but Siegfried violently opposes the vassal implication. A struggle is only averted by Kriemhild's appearance.

The above is of special note in that extraordinary symmetry is maintained in the camera set-ups. Kriemhild approaches : the

loving-cup ritual is nicely handled but has been upset in the abbreviated version available. Finally Siegfried and Gunthur join hands on oath of loyalty, and, symbolically, as the shot fades out, the black hand of Hagen grips them both. This last shot has been given a soot-and-whitewash treatment, for dramatic emphasis, a successful if rather crude method.

Brunhild is introduced in close-up with *quick* iris-in and out, very appropriately. In long shot we see her castle, surrounded by fire. Over the rocky plain Siegfried and Gunthur approach with their company : the flames die down : they are admitted. Ingeniously, Brunhild is shown as assuming that it is Siegfried who has come to conquer her : excellently, opposed back and front shots jerk the tempo of her approach : then, turning to Gunthur, she indicates the tattered shield of her previous opponent . . . Siegfried fingers his invisible net. Outside the castle gates he raises the net and disappears—effectively this time, by *fading* away.

Crowds take their places in the natural arena. Then comes a shot of unusually well calculated camera-angle : Brunhild stands at the top of a flight of steps, her height filling the frame, the camera being at the level of her feet ; small in the distance, but approaching and thus gradually coming to equal her in height, comes Gunthur.

The triple contest is straightforwardly presented, but the beams of light in the sky are interesting. Siegfried, neatly superimposed as a light outline, assists Gunthur who prevails. The impact of the javelin on Brunhild's shield is well shown in two short flashes of eleven frames each : in the last shot she collapses, unfortunately weakening the effect by over-acting.

A spacious long shot shows the return to Worms : and after Brunhild's anger at Siegfried's betrothal to Kriemhild has been soothed, all proceed up the vast steps to the cathedral, a beautiful set done a grave injustice in the available version by appearing on the screen for only 80 frames — 5 seconds —during which appreciation of its imposing grandeur is impossible. This shot again is absolutely symmetrical, an arrangement here ideally suitable.

This symmetry is maintained throughout the long and mid-shots of the double wedding in the cathedral, including the close-up of ringing bells : and the sequence appropriately ends with a perfectly central iris-out.

The subduing of Brunhild by Siegfried, in close and mid-shots intercut with mid-shots of the uneasily waiting Gunthur, is aptly photographed with harsh accent lights, giving a contrasty image and heavy shadows. The device of Siegfried taking on Gunthur's appearance is well presented from a technical point of view in well-matched mixed long shots, but is dramatically confusing as the unexplained power is rather incredible. The change back is in a complex shot, since Gunthur is in the picture throughout Siegfried's re-assumption of his own appearance : this involved a masked shot one part of which contains a mix. The timing is excellent. Siegfried thoughtfully holds the bracelet he wrested from Brunhild—emphasised in an unnecessary close-up.

In close shots of sparkling brilliance, arranged so that the frame is fringed with blossom, Siegfried sits in a bower whistling to the birds : Kriemhild approaches and, seeing him thus engaged, raises her eyes to heaven with, unfortunately, a ludicrous effect. Siegfried takes her in his arms with an appropriate, sweeping gesture : dully, in calculated contrast, Brunhild watches from a window . . . her jealous despair is well portrayed in the one mid-shot. Kriemhild shows the bracelet she has just found to Siegfried, but . . .

a. C.S. his smile fades to a frown . . .
b. C.S. The bracelet on her arm : his hand grips her arm . . .
c. M.S. He says to her . . .
d. TITLE " *Take off that bracelet. She who possesses the treasure of the Nibelungen has no need of this accursed jewellery* " . . .
e. M.S. he says and turns away (continuation of c).

The choice and arrangement of shots (a), (b) and (c) are excellent, and their dramatic impact remarkable : in contrast, the sequence concludes lamely with Sieg-

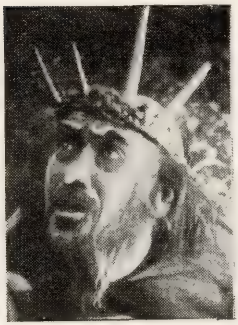
Hanna Ralph as Brunhild, Queen of Eisenland.

fried's explanation about the bracelet, all covered in the camera set-up (c) varied only by medium close-up and by long shot for the fade-out : and once again perfect symmetry is observed, this time with irritating pointlessness.

On the cathedral steps Brunhild insults Kriemheld and pushes past her : this is rendered in a rather confusing series of shots intercut with questionable effect : confusing in that, having been filmed from opposite sides against sky background, the players seem to jerk around, i.e., the geography is inadequately established. One low angle

Hans von Schlettow as Hagen.

George John as Mime.



George John as Alberich.

shot of the two women is excellently composed and most impressive. Langishly, after Kriemhild has blurted out the truth, Brunhild strides down to Gunthur : and he hangs his head (another unfortunately over-emphasised gesture). Brunhild dashes to the drawbridge and is saved from suicide by Hagen : " *Kill Siegfried,*" she cries : and again, to Gunthur (the title being printed in larger type) : " *KILL SIEGFRIED.*"

Sequence 18 is over-titled and interesting only for its excellent first shot, a delayed-iris-in of Hagen. The delayed iris throws sinister suspense into his appearance.

Sequence 19 is tersely arranged in harshly-lit shots of remarkable power : implacable Brunhild ; distraught Gunthur ; evilly murderous Hagen, in a dramatic composition of verticals, as he intrudes through a curtain. Then, in a fine close-up with hard light on her face and Gunthur in dull shadow, Brunhild whispers to him . . ." *The craven who stole my bracelet, robbed me also of my honour.*"—and edges behind him : he turns ; then follows another dull close-up of him against a perfectly white background, a dramatic effect. He announces a hunt . . .

Then, concisely,—

a. M.S. Kriemhild embroiders . . .
b. C.S. . . . a cross (circular mask) MIX TO
c. L.S. In armoury, Hagen practises with a javelin. FADE OUT.

In the centre of a long shot teeming with movement a huntsman blows his horn : in the castle Siegfried makes to start but Kriemhild tries to dissuade him from going : intercut are low angle shots of the huntsman ; at last Siegfried tears himself away. Kriemhild at the embrasure waves, and, by a blossom-laden bower, he waves back. Finely, in long shot looking down the length of the drawbridge, the hunt sets out. Within, Queen Ute comforts Kriemhild.

This fine sequence approached perfection in the original : abbreviation has spoiled the slow rhythm of shots expressing Kriemhild's grim foreboding ; and, most grievously, the dream of the hawks has gone. This remarkable cartoon perfectly conveyed the dread of Kriemhild's dream; a daring, successful, and curiously un-Langish (!) experiment.

The hunt concludes : Gunthur sits aside with his thoughts ; Hagen holds the selected javelin, and at Siegfried's request mentions the spring : and then this is shown in long shot looking down the birch glade—another lovely studio design. Siegfried races ahead and throws himself down to drink at the spring : Hagen, above, darkly silhouetted against an evening sky, throws the javelin : and it pierces Siegfried's shoulder.

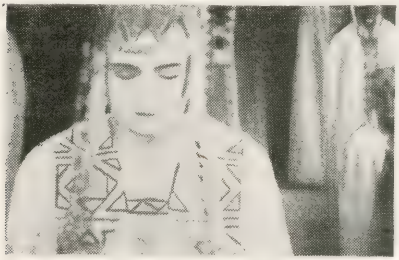
Protracted death scenes are always dependent primarily upon the actor for their effect : and in the present case full credit must go to Paul Richter. First in long shot in the flower-decked glade he staggers to his feet again, and his terrible cry, twice uttered, of " *Hagen* " (no title) comes eerily from the screen. In another long shot he staggers back towards Hagen : and at last, confronting his murderer, he desperately raises his shield, before finally collapsing. This is a flawless performance.

The sequence concludes with a stark, contrasty long shot of the scene, with accusing arms pointing at Hagen. Correctly, with dramatic counterpoint, the reaction at the Castle is portrayed by carefully chosen shots, their arrangement a model of implied narrative :—

a. L.S. Kriemhild's bedroom : the curtains blow : she sits up in bed.
b. M.S. (exterior) A dog howls.
c. C.S. (dark interior) Brunhild : she realises, closes her eyes.
d. L.S. (as a) She looks towards the billowing curtains.
e. L.S. (exterior) Wind blows along the castle drawbridge.
f. L.S. (as a)
g. L.S. (as e) With guttering torches, Hagen leading, Siegfried's body is borne along to the Castle. His white horse follows . . .

Then Gunthur informs Brunhild, to be greeted with hysterical laughter : and, in hopelessly over-long and theatrical long shot, Kriemhild walks across a room to Siegfried's body, and touches his wound : cut-in is a piece of perfect symbolism—the shot of him waving goodbye to her by the bower mixes to a shot of the bower without flowers, all withered, and so disposed as to resemble a skeleton skull, a weird and eerie effect.

The remainder of the film is interesting only for the design and composition of the theatrical shots of Kriemhild's threat to Hagen, where from low camera angle a finely massive ceiling is seen ; and the final lying-in-state in the cathedral. The last shot has an eccentric iris-out on Kriemhild, a curiously unsatisfactory effect as Siegfried's body is the centre of dramatic interest. The idea was presumably to focus



Margarete Schoen as Kriemhild.

attention on to Kriemhild in view of the film's sequel. This sequel, inevitably doomed to failure by its defeatist theme, is a vast, spectacular pageant of boredom, available on four S reels as *Kriemhild's Revenge*. Professional English release was in December, 1925, under title *The She-Devil* (7,000 feet).

Siegfried is one of the rare films which one can see and see again and cherish as a lovely, legendary memory. The beauty of the design is absolutely beyond reproach : the photography, though too objective, harmonises with the design scheme particularly as regards perspective and symmetry : and Fritz Lang's direction and balanced grouping (e.g., on cathedral steps, see still) are conceived in similar strain.

Had it not been for the theatrical tendency, so marked at the end and so painfully similar in grandiose misfiring to the end of *Metropolis*, *Siegfried* would indeed have been a masterpiece. Not till *The Spy* (1928) did Lang finally realise the weakness and cinematic error of the static long shot : this admirable thriller was a gem of cinematic action-drama, shot counterpoint being on a rare scale of sustained and unobtrusive brilliance, far surpassing *Metropolis* in this respect.

It is an extremely happy thing that in *Man Hunt* (1941, with Walter Pidgeon, Joan Bennett—20th Century Fox production) Fritz Lang has made another superlative thriller, with distinct Langishness : the film reassuringly proves his remembrance of his old power, nor has he forgotten the camera. The street and Underground scenes are perfect. *Man Hunt* and *Citizen Kane* alone make 1941 cinematically worth while.

Apart from Lang and his wife who wrote the scenario, the players and the architects merit a share of the praises : most of the former have been noted above, but Gertrude Arnold as Queen Ute appears in only a few shots in the available version, and Frieda Richard as the Reader of the Runes has altogether disappeared. This player was in *Cinderella*.

The superb architecture sings for itself ; only one big creation is wholly missing, namely Siegfried's " Dragon Ship " ; from this exact replica of the ancient Norse galleys Brunhild walked majestically ashore over the shields of fifty knights. The available version, however, is much to be thankful for : though less than half the original it preserves the spirit and presents the lasting beauty of this picturesque legend.

NATIONAL FILM LIBRARY CATALOGUE

Details of sixty-two important films are contained in the " Catalogue of the Loan Section of the National Film Library," recently published by the British Film Institute at 6d. They illustrate the early history and development of the cinema, and include copies of the short ' primitives ' shown in 1896, early one reel comedies and dramas, and copies of classics such as " The Cabinet of Dr. Caligari " and " Battleship Potemkin." In addition there are composite films illustrating particular developments (e.g., early trick films, history of the cartoon and the actuality film) and short extracts from the classics for lecturers and students. The catalogue is provided with extensive notes on each film and on the general development of the art of the cinema. Members of the Institute are entitled to borrow all films at reduced fees.

LUMINOUS DISCS FOR DARK-ROOMS

We have received from Messrs. Todd's, Grange, Errol, Perthshire, a sample of Auralite luminous sheet. Auralite luminous products are surfaces coated with a substance which becomes luminous after only five minutes exposure to day or artificial light, and remains thus for over twelve hours without further exposure. A 10 in. diameter disc (the Auradisc) provides sufficient light to enable the principal contents of a medium-sized room to be distinguished.

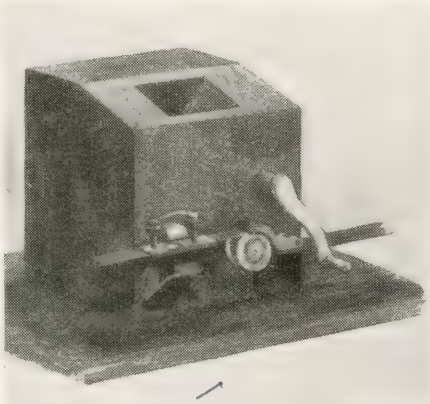
The movie-maker will find it particularly useful for the darkroom (e.g., for loading chargers or for any work normally requiring darkness.) Lengths of panchromatic film processed in the direct light of Auradisc show no signs of fogging. For the black-out the uses of the material are obvious. Armlets, badges, discs, strips and signs are available at prices ranging from 3d. to 3/9.

"DO IT YOURSELF!" practical ideas for the handyman

An Animated VIEWER

In each issue our contributor supplies worth-while ideas: things to make and things to do. Suggestions for gadgets are welcomed.

By G. A. GAULD, B.Sc.



THOSE readers who have written to me, asking for information about a home-made animated viewer, must forgive me if I have apparently neglected their requests. The truth of the matter is, they set me a pretty problem. If an intermittent movement is to be made with ordinary hand tools, then orthodox designs must be scrapped ; something entirely new must be worked out, or a standard mechanism be modified to such an extent that it *can* be made in the home workshop.

Considering first the modification of a standard mechanism, claw movements had to be ruled out. They are generally intricate and fragile, and must be well made if there is to be no danger of damaging the film. There seemed, however, to be possibilities in the maltese cross movement, found, strangely enough, in both the cheapest of toy projectors and professional theatre machines.

The standard cross, giving intermittent rotation to a four frame sprocket, one quarter of a revolution at a time, is not altogether suitable for application to substandard sizes. A four frame sprocket for 16 and 9.5mm. film would be less than half an inch in diameter and half that again for 8mm. film. The curvature would be too sharp to allow the film to lie closely against the sprocket and, with only one sprocket hole per frame, it is doubtful if there would be more than one tooth in mesh at a time. Furthermore, a four frame sprocket in substandard sizes is not a stock item on the spare parts list.

For professional work, where a rock steady picture is essential the cross movement must be made to extremely accurate limits. When the requirements are less exacting, as in the case of a viewer, the movement will give tolerable results even if crudely made. It is thus possible, by suitable modification, to make a satisfactory job in the home workshop. The difficulty of the small non-standard sprocket may be overcome by using an eight point cross in conjunction with an eight frame sprocket, obtainable as a spare for almost any make of projector.

Such a cross is illustrated in Fig. 1, the locking ring associated with the shift pin being omitted for clarity. Bearing in mind that the shift pin enters the slot in the cross tangentially, it will be observed that the cross is given its intermittent rotation during $\frac{3}{8}$ of a revolution of the shift pin disc, not $\frac{1}{4}$ of a revolution as is the case with a four point cross. Thus, instead of getting a shift ratio of 4 : 1, the efficiency of the movement is reduced to a ratio of 8 : 3. If "ghosting" is to be avoided, a shutter of the order of 180 degrees will be required.

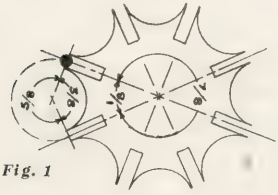


Fig. 1

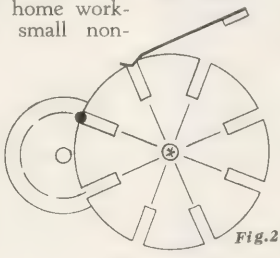
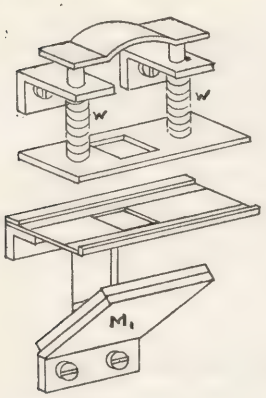


Fig. 2

The mechanism may be further simplified if the locking ring is dispensed with, a flat spring being used instead to locate the cross in its stationary position. The cross becomes a disc, having eight slots cut round its circumference, as shown in Fig. 2, the shift mechanism



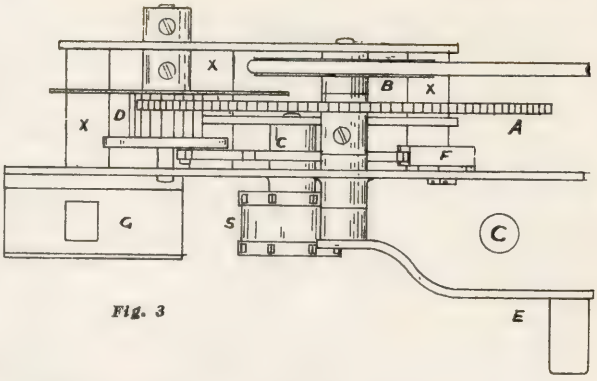


Fig. 3

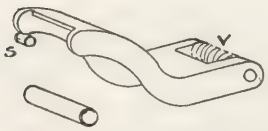
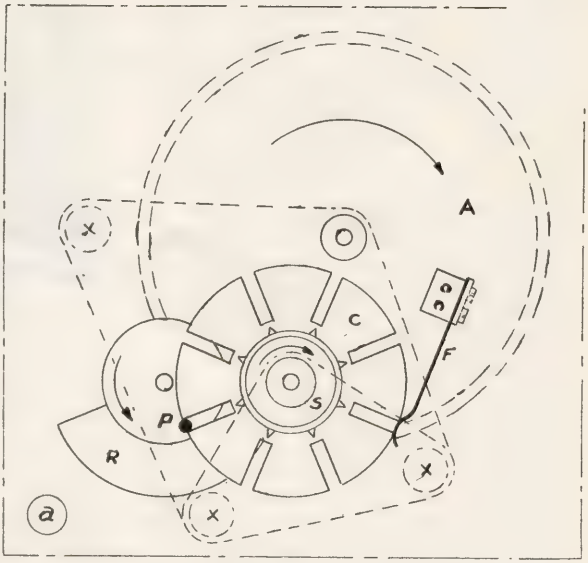


Fig. 4



being reduced to a single pin, rivetted to a plain disc.

Practical details of the viewer are given in Fig. 3. The shift pin P causes the cross C, and consequently the eight picture sprocket S, to rotate intermittently, one picture at a time. The cross is locked in the stationary position by the spring F and during movement, the light is cut off by the 180 degree shutter R. The shift pin shaft is rotated through a gear (ratio 7 : 1) consisting of a $\frac{1}{2}$" Meccano pinion and a 133 tooth Meccano gearwheel, driven by the hand crank E.

Feed and take-up sprockets are not provided, being an unnecessary refinement. If there is undue snatch when running through a full reel of film, tension rollers may be added. These are simple rollers each fixed at the end of a short length of flat spring. These are fitted, one to each side of the main frame, so that the rollers bear down on the film as it enters the gate and leaves the intermittent sprocket. They will vibrate up and down and ease the passage of the film, smoothing out the difference between the even run from the reel to the intermittent movement at the gate.

A 2" pulley may be fitted to the shaft of the take-up reel and driven by a spring belt from the 2" Meccano pulley, B. This pulley is loose and friction driven from the gearwheel. Two flat discs are attached to each end of a coil spring large enough to slip over the boss of both pulley and gearwheel. The discs will press against the faces of the two wheels, forming a friction drive.

The main plate and two smaller bearing plates are cut from $\frac{1}{16}$" sheet brass. Suitable lengths of $\frac{5}{16}$" round brass rod are cut and filed up square on the ends to form the separators X. They are drilled right through the centre and tapped $\frac{1}{8}$" Whit. The bottom two, which carry the small bearing plate, are in two halves, connection being effected by a short length of $\frac{1}{8}$" screwed rod passing through the small plate. The main plate and back bearing plate are attached by $\frac{1}{8}$" countersunk screws.

The holes for these screws should all be drilled at the same time, the three plates being clamped together in their correct relative positions. This will ensure correct alignment. In the same way, by bolting all three plates together, through these holes, without the distance pieces, correct alignment for the shafts will be secured if the bearing holes are drilled through all three (or two) plates at the same time. The two overhung bearings for the crank handle and sprocket are strengthened by soldering on Meccano bushes to the main plate. All the other bearings are simply holes drilled through the plate itself.

The sprocket is made a tight push fit on its shaft, the cross being fixed with a grub screw. To make the cross, the disc is first cut out from brass sheet and mounted on a bush. A Meccano bush can be sweated on, but it is a great advantage if a proper bush can be turned and shouldered down to take the disc, which is sweated on and finally skimmed up dead true. The slots are next carefully marked out, $\frac{1}{8}$" wide, and after roughing out by drilling $\frac{3}{32}$" holes all the way down, are carefully brought up to shape by opening out with a thin flat ward file. They should just take a $\frac{1}{8}$" pin an easy sliding fit up and down the slot.

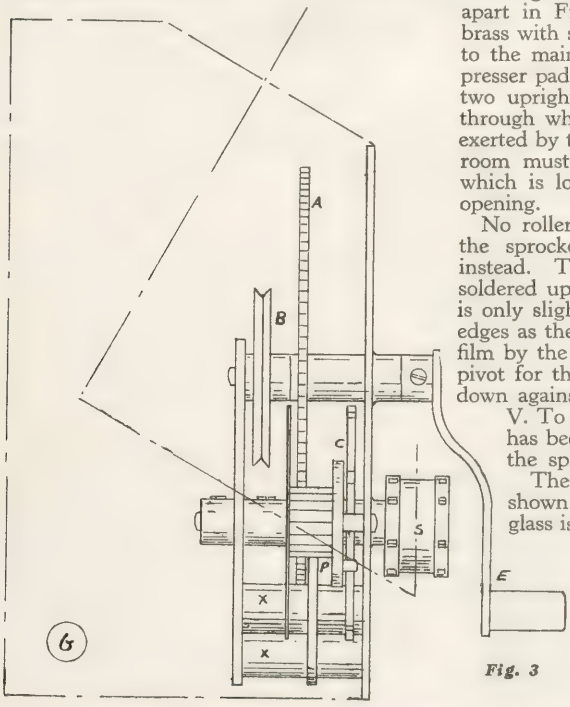


Fig. 3

The shift pin disc is next cut out and sweated on to the $\frac{1}{2}$" pinion. The end of a short length of $\frac{1}{8}$" dia. rod is shouldered down to $\frac{3}{32}$" and held in the vice. The hole for the pin is then drilled $\frac{3}{32}$" in the disc, passed over the end of the rod which is then rivetted over. The rod is then cut through, leaving $\frac{1}{8}$" or so projecting.

The shutter blade is cut out of thin "tin" and sweated over the shank of the pinion, care being taken not to detach the striker disc by pressing it down on a damp cloth during the operation.

The crank handle is easily made up by sweating the sheet brass strip to a Meccano bush and rivetting on a short length of rod to form the grip. The large gear wheel A is fitted in the normal way by its grub screw, but packing washers will be needed.

The locking spring may be made from a piece of clock spring from a child's toy. The end should be softened by heating in a gas ring flame, and gradually bent to shape, a little at a time, reheating several times. With care, the temper of the remainder of the spring need not be destroyed. It is attached to the main frame by means of a simple bracket, slotted holes being provided for final adjustment.

The gate and presser pad are shown drawn apart in Fig. 4. The gate, a flat strip of brass with side strips sweated on, is attached to the main plate by an angle strip. The presser pad, a flat strip to which are rivetted two upright pins, is located by two angles through which these pins pass. Pressure is exerted by two wire coil springs W. Sufficient room must be left for the flashlamp bulb which is located immediately over the gate opening.

No rollers are used to retain the film on the sprocket, a simple guide being used instead. This is cut from sheet brass and soldered up as shown in the sketch. There is only slight contact with the film along its edges as the guides are held just clear of the film by the stop S. The guides swing on a pivot for threading the film and are pressed down against the stop by a wire coil spring V. To show the construction, the sketch has been drawn as it would appear with the sprocket withdrawn from its shaft.

The optics are very simple, and are shown in Fig. 5. A single magnifying glass is used; the focal length of the one I used for my experiments was about eight inches. The film was in focus and viewed comfortably from a distance of ten to twelve inches when the glass was six inches from the film. Although

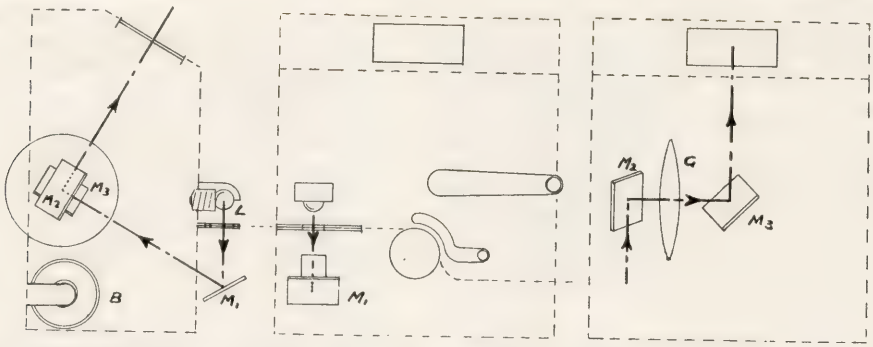


Fig. 5

the film in the gate may be viewed directly through a magnifier from above, it is better to bring the image to a more convenient point and right way up. This is accomplished by means of three small mirrors.

A flashlamp bulb L, supplied from the battery B, serves to illuminate the film, the light passing down and being reflected back and up through a hole cut in the main plate, by the mirror M-1. The mirror M-2 then sends the image along to the right, through the magnifying lens G to the mirror M-3 which turns the image up and forward to be conveniently viewed through the window in the top of the case. On its way from M-1 to M-2, the ray of light passes through the shutter. This is seen more clearly in the third diagram, Fig. 3.

The shutter is arranged to block off the light as the film is being drawn through the gate. The first mirror is set at an angle of 60 degrees to the main plate. As the other two mirrors turn the ray through a right angle, they are set at 45 degrees to the line of sight. They may be fixed to the main plate by means of brackets and wooden packing pieces, and, when finally adjusted, secured by Seccotine.

The actual position of the magnifying glass will depend on whatever is available. It should be tried out "straight" and its position then worked out, bearing in mind that distances are measured from the gate via the mirrors.

A case of wood or metal completes the job. An external coat of black will improve the appearance of the viewer ; dead black on the inside surfaces will help in providing a bright and clear image of the film.

Viewer No. 2 has an optical intermittent in the form of a rocking mirror. As it passes more light, the image may be cast on to a miniature screen. It is simple enough but calls for rather greater care in construction than the one just described. I hope to be able to give details of its construction in the next issue.

Silent to Sound

ONE of the greatest difficulties in the way of anybody attempting the addition of sound-gear to his own projector has been the complete absence of a reasonably comprehensive reference-book, suitable for amateur use.

The recently produced "Practical Sound Conversion for Amateurs"* is therefore very welcome, being a really helpful attempt to cover the relevant ground in an understandable and concise manner. The beginner will find it exceptionally easy to follow, while the more advanced amateur is certain to find much useful reference material in its pages.

Most of the matter is equally applicable to the three popular sizes of sound-film, but special arrangements for each are suggested.

Scanning systems, photo-electric cells, pre-amplifiers, interference suppression, experimental "hook-ups," and definitions of the various standards involved, are all, with many other subjects, ably described and illustrated. In particular, the early part of Chapter 3, on the suitability of machines for conversion, is well worth careful reading and study by every prospective "converter."

The few minor errors which inevitably creep into such a work are not likely to mislead anybody seriously, but it might be worth noting that in the first diagram of Fig. 11, the anode circuit is not all shown, and the H.T. battery ought to have its negative lead earthed, and not isolated by a condenser. These, however, are points which the amateur with any radio experience would easily notice and rectify.

The author makes a very generous offer of personal assistance, both in solving individual problems, and also in obtaining materials, or even making parts for those who are unable to do so themselves, an offer which is particularly acceptable under present conditions.

The purpose of the booklet is to assist the reader to make reasonably good conversions from popular machines, with a minimum of expenditure and complication. For this reason, no attempt is made to deal with the somewhat exacting refinements necessary for obtaining the highest possible sound-quality from sub-standard apparatus. Within the scope of its title, however, it is admirably successful and can be recommended as a sound investment, in every sense. C.L.T.

(Our reviewer begins in the next issue of Amateur Cine World a new feature for 'sound' enthusiasts: "Tracking It Down." It will be a platform for the exchange of views, notes on experiments, solution of problems, etc. If you have a query on 'sound' topics, write to "Tracking It Down.")

* *By F. G. Benson. Obtainable from 88, Greenfield Av., Carpenders Park, Watford, Herts. 5/6 post free.*

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16mm. Kodachrome Enlarged to 35mm. Technicolor

A STRIKING development in colour cinematography—one that is likely to have far-reaching effects on the substandard film movement—has recently been effected in America. For some time (as mentioned in *A.C.W.*) there have been rumours that Technicolor was to become a single-film process. That does not yet appear to have become a reality, but an innovation that is likely to have a comparable effect has now been evolved.

This is no less than the successful enlarging of 16mm. Kodachrome to 35mm. Technicolor. Details of the process are given in the September issue of "The American Cinematographer," published by the American Society of Cinematographers. (You see the initials, A.S.C., after the name of every camera executive in the list of credits in American films). The editor, Mr. William Stull, in a very friendly letter to *A.C.W.* kindly gives us permission to reprint the following details. (Incidentally, Mr. Stull tells us that, despite the attentions of Raeder, the only copies of *A.C.W.* missing from the A.S.C. Library are those purloined by A.S.C. members. And "The American Cinematographer" reaches us just as regularly).

When 16mm. monochrome is 'blown up' to 35mm., the graininess is distressing. But since Kodachrome is virtually grainless, there is none to be rephotographed and magnified in the enlarging process. In the prints so far produced the definition and optical quality were alike excellent, while tonal range and gradation are described as a revelation. There was less the appearance of a dupe than Stull had considered possible. Flesh rendition was "definitely the best we've seen in any Kodachrome enlargements, and much cleaner than is general in even the best 16mm. Kodachrome dupes.

"The optical quality of these enlargements proved another pleasant surprise. The perspective and depth of field given by the 25mm. lenses customarily used for 16mm. are of course retained in the enlargement, and the result, from 35mm. and on a large screen, seemed almost uncanny. There was depth there that could not be approached in any 35mm. without risking the often distorting perspective of a wide-angle lens. What can be done with an enlargement made from a 16mm. Kodachrome photographed through the normal substandard wide-angle objectives—20mm. and 15mm. —should be a revelation on the screen."

Three selectively filtered 35mm. colour-separation negatives are produced optically, the actual printing method being identical with that used in making Technicolor prints from any conventional Technicolor negatives. One advantage in thus enlarging 16mm. Kodachrome is that a very considerable amount of control is possible—a refinement hitherto unknown in the 16mm. commercial Kodachrome field.

The original should be photographed in a high-grade 16mm. camera and an absolutely steady tripod *must* be used. Unlike the exposure for 16mm. to 16mm. Kodachrome duping, which should be on the full side, Technicolor prefers the exposure in the 16mm. original to be just barely on the low side of normal.

A clean print is absolutely essential, since dust, finger-marks and abrasions are incredibly magnified in the enlargement. The 16mm. original should not be projected even once—not even by the Kodachrome processing laboratory. A duplicate (which can be in monochrome) should be made for editing purposes. Stull suggests that it might be a very logical precaution to have the 16mm. original lacquered by the process recently perfected by the Kodak Research Laboratory. This would tend to eliminate traces of handling, and if marks should occur afterwards, they could usually be removed entirely by simply removing the lacquer coating before the enlarged colour-separation negatives are made.

The value of the process lies in the fact that 35mm. colour films can now be made of subjects previously denied to Technicolor because of the impracticability of transporting the bulky 35mm. equipment, and that it makes available subjects that hitherto could be taken only on Kodachrome (e.g., slow motion with the 16mm. Filmo 'Golf Special' is obtained at the speed of 128 frames per sec.; Technicolor cameras do not operate at quite this high speed).

The first professionally-made theatrical 'short' photographed in 16mm. Kodachrome for 35mm. Technicolor release is Warner Bros.' "King of the Turf." This important innovation is surely rightly described as "1941's most sensational development, and one which offers tremendous promise."

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AT YOUR CINEMA

A New Camera Technique

EACH of the "Famous Library Films" which have been analysed in *A.C.W.* has made an important contribution to the history of the cinema. A few of them, notably "Vaudeville," have pioneered developments in camera technique. And now, when one thought there was little new to be expressed and no new way of expressing it, comes another milestone in the march of the movies: "Citizen Kane."

Every student of the cinema should make a point of seeing it. It is a fine example of direction (Orson Welles, the director, is also the star), but even more a triumph of cameracraft. Gregg Toland, the director of photography, has introduced in it ideas which are almost as revolutionary as were Karl Freund's in "Vaudeville" and which, like them, will surely have a marked influence on future trends.

Even the uninformed cinemagoer is likely to be impressed by the great depth of field; he will probably not know *why* he is so impressed—he will only be conscious of a sense of stark realism to which that technique contributes. Even in long shots details are critically sharp, whether they are five feet or fifty feet from the camera. (This is achieved principally by stopping down the lens; and there is nothing so revolutionary *per se* in that, until one remembers that f/3.5 is considered a very small stop for professional films, whereas stops down to f/16 with short focus coated lenses (often 24mm.) were used for "Citizen Kane").

A useful characteristic of this depth of field is that it militates against excessive camera movement, for, if you can show clearly in one shot everything you want to show, there is no point in dithering about with the camera and cutting backwards and forwards. But, of course, it is not so easy as all that, for, if everything in a shot is in focus, how to direct attention to specific details? The answer lies chiefly in camera angle and lighting—and shadow. It is noticeable that, in some parts of the film, the supporting players are far more strongly lit than Welles, who is mostly in shadow and, for that very reason, dominates the scene. The lighting incidentally, must have created many problems, for not only do small stops demand a great deal of light, but most of the sets have considerable depth, together with low ceilings.

The technique is, of course, one that invites failure in less competent hands, and certainly it does not oust the conventional methods of angle selection and cross cutting; nor does it spell the end of differential focussing or of camera movement—indeed, the many mobile camera shots in the film are, with few exceptions, remarkably successful, chiefly because one is not entirely conscious that the camera is moving. It does, however, demonstrate that, imaginatively used to further the action (and not merely employed as a technical trick to ensure sharpness of definition), it does result in enhanced realism. Doubtless, when stereoscopy arrives we shall look back upon it as crude and flat.

Technical brilliance, however, is barren unless it be allied to imagination and interpretive skill. In all departments—acting, settings, direction as well as photography—"Citizen Kane" reaches a high level. The new technique contributes to this result. It does not create it. R.D.F.

"FANTASIA": Second thoughts on the Cartoon technique.

MUCH has been written of the aesthetic qualities of Disney's "Fantasia." In the following notes I am concerned only with the technical aspect. The sound used in America was briefly described in the June, 1941, issue of A.C.W. There are two films: one containing the picture proper and the other three sound tracks and a control track. The latter governs which of the other three is heard through which speakers and at what volume.

Speakers are distributed all over the auditorium (entailing special wiring of every cinema that shows the film) so that the audience are made to feel that they are actually in the midst of the film, instead of viewing it objectively through a frame at the end of the hall. The intention is that this special "Fantasound" version of the film should go on tour like a play.

In England, presumably because of the expense and shortage of apparatus in war time, this elaborate sound system is not available. Instead, a normal sound track, made by mixing the three original tracks, is used. This is of no particular technical interest, except in that it is a track of the very finest quality, and does full justice to Leopold Stokowski and the Philadelphia Symphony Orchestra.

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It must be admitted that, from a purely technical point of view, the cartooning is very disappointing. In general the actual drawing (particularly the rather loud colour schemes), the animation, and the camera-work are all inferior to the technique displayed in "Pinocchio."

"The Rites of Spring" sequence presents some interesting features. Taking as its theme the evolution of the world and life thereon up to the dinosaurs, it opens with an astronomical sequence. Beginning with a distant shot of a spiral nebula, the camera starts to track forwards till individual stars become visible and finally our insignificant little planet. This sequence, which is one of the best in the film, is reminiscent of Fischinger's abstract on the 2nd Hungarian Rhapsody, and also of the stellar parts in Disney's "Wynkin, Blinkin & Nod."

From this we come to shots on the surface of the earth when it first begins to solidify—hundreds of volcanoes, rivers of lava and so on. Here Disney has made the mistake of trying to synchronise action to music, instead of merely adopting its *mood*. The music at this stage is lively, and terrible

Leopold Stokowski, who directed the music for "Fantasia," discusses the picture with one of the artists in the Disney studio. The film, as shown in London, has now been cut by 2,444 ft.

perhaps, but quick moving. The result is that he has made his volcanoes spurt and pop like a series of Roman candles. They appear, due to the rapidity of the motion, to be but a few inches tall, instead of great mountains hundreds of feet high.

The same trouble has arisen in the next section, when the dinosaurs first appear. They skip about like lambs. In an article, "The Physics of Lilliput," in A.C.W. for Sept. 1940, I discussed the relationship of motion and size, and showed how large animals, however strong they might be in the muscles, can only move slowly and ponderously, whereas small animals like insects, however weak, move with great rapidity.

As everyone knows, the dinosaurs were of immense size, some being eighty or a hundred feet long. Such animals would move far more slowly than the largest elephant, and the fact that Disney's do not do so, has the effect of making them appear merely a few inches long, living in jungles of dwarf trees. At the very end of this sequence, however, a drought occurs which finally destroys these enormous mammals. Here at last Disney has slowed up their movements, and at once they appear far larger in size. Their slow ponderous motion, as they drag themselves across waterless deserts, is an excellent illustration of how an impression of size can be conveyed visually without resort to an object of reference of known size in the picture.

In the "Casse Noisette" sequence there is a beautiful scene in which ice fairies dance over a sheet of water and freeze it in great ice crystals. The complete rigidity of these crystals as they grow was obtained by shooting backwards, and rubbing them out bit by bit from frame to frame. If they had been animated in the ordinary way, and completely redrawn for each successive celluloid, it would have been impossible to give them the same appearance of rigidity, which was the essence of the scene.

It is worth noting that it was only in "The Sorcerer's Apprentice" sequence—the only sequence which contained a real story—that one felt that Disney was quite at home with his material. This sequence, a straightforward Mickey Mouse short, contains nothing really brilliant, but is undoubtedly the best entire sequence because Disney knew how to deal with his material, and could use exact synchronisation with effect. (Incidentally he has used Dukas' music before for ordinary Silly Symphonies).

The sound track shown would probably be quite amusing to a layman, but the fact that it bears no resemblance to a real sound track makes it rather irritating to a film technician.

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We have therefore compiled the following list of libraries from which he may hire supporting films free of charge. These films are publicity and educational pictures, and cover so wide a range of subject that all tastes are likely to be catered for.

The list is by no means complete, but is certainly more detailed than any that have yet appeared. Errors in earlier lists have been corrected, and for the first time an indication of the *type* of film available is given—an important feature that may well save the borrower from wasting his own time and that of the libraries in fruitless enquiries.

BRITISH COMMERCIAL GAS ASSOCIATION, Gas Industry House, 1, Grosvenor Place, London, S.W.1. (a) None; borrowers should give as much notice as possible. (b) Return postage. (c) No limit, 'but very seldom do borrowers require more than four films for one show.' (d) No time limit, unless the films required are heavily booked. In exceptional cases, films have been loaned for three months. (e) 3 S. 17 Sd. Silent subjects: "Manufacture of Gas," "How to Plan a Kitchen," "How to Warm a Room" (the last two mute versions of sound films). Sound subjects include: "Children at School" (directed by Basil Wright. 24 min.), "Housing Problems" (story of the slums from the inside. Directed by Arthur Elton and Edgar Anstey), "The Londoners" (story of London and the fight of the people for a freer, healthier way of life. Directed by John Taylor. 36 min.), "Green Food for Health" (digging for victory and ideas for salads), "It Comes from Coal" (coal as a source of chemical wealth). The following three subjects (Sd.) are offered as supporting films. Normally they are loaned only as additions to the films listed above, but they are not without educational value, though in lighter vein: "Happy in the Morning" (musical with Henry Hall and his Band), "Getting into Hot Water" (comedy of domestic life), "Two Frightened Ladies" (Mr. Therm to the rescue).

BRITISH ELECTRICAL DEVELOPMENT ASSOCIATION INC., 2, Savoy Hill, London, W.C.2. (a) To clubs, camps and institutions—not individuals. (b) Return postage. (c) As arranged. (d) As arranged. (e) 3 S.: "Country Currents" (value of electricity in rural areas, with illustrations of its uses), "Power" (5 reels), "Electricity" (2 reels). A booklet on the last two films is available. Sd.: "The Wizard in the Wall" (a true 'fairy tale' of a sequence of notable discoveries beginning with Thales, continuing with Humphrey Davy and Faraday, and concluding with the evolution of the grid).

BRITISH OVERSEAS AIRWAY CORPORATION. Films now in Central Film Library (q.v.). It is hoped shortly to have prints of a new colour film containing some outstanding photography of the Corporation's Africa route.

Your Public Show

The following abbreviations have been used :—

(a) Indicates conditions on which films are loaned. Some organisations, for instance, will loan films only if an audience of a certain size is assured. (The films are not usually available for private showing at home). It is invariably a condition of loan that no charge must be made for admission. When films obtained from a charitable organisation are shown, it would be a kindly act on the part of the borrower to arrange for a collection for the charity concerned.

(b) Indicates if borrower is required to defray postage.

(c) Number of films he may borrow at any one time.

(d) Period for which they may be retained.

(e) Number of films available and brief descriptive notes on some of them. S—Silent. Sd—Sound film. **Unless otherwise stated, all films are 16mm.** Where no indication of length is given, it can be taken as a general rule that the film is on one reel.

CADBURY BROS., Ltd., Bournville. (a) None, but the use of the films in schools and other centres of education is encouraged. (b) Return postage. (c) Depends on conditions, but it is preferred to send only one film at a time. (d) Three days. (e) 4 9.5mm. S. : "The Cocoa Bean" (the bean from harvesting to shipment; also lives and handicrafts of Gold Coast natives), "A Day at Bournville" (conditions under which Cadbury's products are made and recreational facilities for employees), "Country Fare" (some aspects of agriculture, such as production of eggs, milk and barley), "Work-a-Day" (workings of modern food factory). 4 16mm. S. : "The Cocoa Bean," "Country Fare," "Work-a-Day" and "Cocoa from the Gold Coast" (classroom film on cocoa growing in British West Africa). 2 16mm. Sd. : "Country Fare" and "Work-a-Day." 9.5mm. films available from Pathescope, Ltd. (q.v.); 16mm. films from Educational Films Bureau (q.v.).

CENTRAL COUNCIL FOR HEALTH EDUCATION, Tavistock House, Tavistock Square, London, W.C.1. (a) None, but the Council likes to know how many people have seen the films. (b) Return postage. It may be necessary in the near future, however, to make some slight charge to all but medical officers, for whom the film library was originally started. (c) As many as required. (d) For any period, by special arrangement. (e) 8 Sd. : "Fear and Peter Brown" (a small boy's fear of the dark, and how it affected his later life), "Carry On, Children!" (care of young children in wartime), "The Fine Feathers" (feeding in wartime; featuring Jeanne de Casilis), "Breath of Danger" (droplet infection. Not too technical), "Skin Deep" (first film of its kind; deals with care of the skin. Colour), "Footsteps to Fitness" (care of the feet). The above films have been made during the past twelve months. "The Health of the Nation" (work of a modern welfare centre), "One Hundred Years" (survey of the improvements made in the public health services in the past hundred years).

The Council publishes a catalogue of some 250 films, 35mm. and 16mm., S. and Sd., owned by its affiliated societies. These societies must, however, be approached direct for their films. Those which are obtainable on free loan are listed here.

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CENTRAL FILM LIBRARY, Imperial Institute, London, S.W.7. This famous library incorporates the Empire, G.P.O. and Ministry of Food libraries and contains all new M. of I. non-theatrical shorts. It also includes many of the films included in this list from organisations such as the British Commercial Gas Association, Petroleum Films Bureau, National Savings Committee and films from the Dominions, in addition to outstanding films by various commercial undertakings. About 600 16mm. S. and Sd. are available, including 69 9.5mm. S., but the number is constantly being added to. 32,000 films were issued to borrowers in 1940. (a) Size of audience is not specified but bookings are in fact conditioned by the size of audience anticipated. 'In general we do not lend films for showing to audiences of less than 40-50. We do not lend films for showing in private homes.' (b) Return postage. (c) Usually not more than 1 hr. programme of films at a time and not more than one such programme to any one borrower in any one week. (d) May be retained for a number of days if borrowers provide evidence that they will be showing them on a number of days during that period; normally they may be booked for 1 day only. (e) Films of the British Empire, inc. agriculture, communications, electricity, engineering, fishing, manners and customs, natural history, scenery, travel, sport. G.P.O. films are in 4 groups: story of transport, story of the postal services, wires and wireless, savings. M. of I. library: the Fighting Forces, Civil Defence, the British Empire, Labour and Armaments, Food Front, Health & Education, Salvage, Savings and Thrift. Full 60pp. catalogue available.

COAL UTILISATION JOINT COUNCIL, 54, Victoria Street, London, W.1. (a) None. (b) Return registered postage. (c) Both films may be borrowed at one time. (d) By arrangement, depending on previous bookings. (e) 2 Sd.: "Buried Treasure" (coal and the mining of it, from coal face to domestic grate. 30 min. *The Times* says of the film: "An admirable record of the daily lives of a fine and courageous body of men . . . enough natural drama in the life far below the earth's surface . . . to make artificiality superfluous and impertinent"), "When Day is Done" (changes in life and leisure hours of British miner brought about by Miners' Welfare Fund).

COMMONWEALTH OF AUSTRALIA, Australia House, Strand, London, W.C.2. (a) None. (b) Return carriage. (c) No minimum stipulated. (d) One showing. (e) 26 Sd., including "This is Australia" (2), "Pleasure Trove," "Tight Lines," "Katoomba," "Glimpses of S. Australia," "Bushland Revels," "Follow the Sun," "A Lesson in Geography," "A Nation is Built" (2).

CO-OPERATIVE WHOLESALE SOCIETY, LTD., Publicity Dept., 1, Balloon St., Manchester, 4. (a) None. (b) Return postage. (c) No limit. (d) Indefinitely, providing requirements are made known. (e) 5 S., 18 Sd. Silent subjects include: "Harvest of the Sea and Field" (from North Sea trawlers to the breakfast table. 800 ft.), "The King and the Cakes" (King Alfred and the Cakes and modern methods), "The Cup that Cheers" (early interest in tea and present methods of blending). Sound subjects include: "Ask the Ladies" (comedy, introducing ladies' fashions, dancing, skating, singing and a revue. 800 ft.), "C.W.S. Band" (brass band selections), "Kitchen Capers" (trick photography in an insight into the canning industry), "Male Voice Choir" (vocal items), "Magic Letters" (colour cartoon; one of the first publicity films of its kind), "Mrs. Feather Explains," "One of Those Days" (featuring Vera Pearce and Dernier Warren), "Postman's Knock" (musical), "Rose of the Orient" (history, cultivation and blending of tea, filmed mostly in Ceylon. Can be classified as a feature film. 1,760 ft.). Four 9.5mm. S.: "From Back to Back", "Herrings", "A Song of the Shirt" and "Biscuit Time" are available through Pathescope, Ltd. (q.v.)

DENTAL BOARD OF THE U.K., c/o 66, Portland Place, London, W.1. (a) none. (b)

Return postage. (c) All, if available. (d) Depends on demand from other sources. (e) 7 S., 2 Sd. Silent subjects include: "Outposts of Health" (use of animal and human teeth, their structure, decay and care; contrast between old-time dentistry and modern methods. 2 reels); "Two Little Pigs" (cartoon of Sam, the farmer's son, and the farmyard pig and the results of their neglecting their teeth), "The Trapeze Man Talks" (visit behind the scenes at a circus, during which a strong man gives advice on teeth). Sd. "Smile if you Dare!" (dentition in animals, care of human teeth), "Nature Shows the Way" (how Nature provides teeth for animals adapted to their needs, and care of human teeth. 2). Both these films are also available in silent versions.

D. and W. GIBBS, LTD., Educational Service Dept., London, E.1. 1 9.5mm. S., "The Magic Seaplane" (adventure of two children on their way to the Land of Health and Happiness). Available from Pathescope, Ltd. (q.v.).

DOMINION OF NEW ZEALAND, Publicity Officer, N.Z. Govt. Offices, 415, Strand, London, W.C.2. (a) None. (b) Return postage. (c) Three. (d) Not more than one week. At least two weeks' notice should be given. (e) 23 S. Industry and production (including "Meadow to Market" and "Dairyland"), Scenery (inc. "New Zealand's Charm" and "Magic Playgrounds"), The Maoris ("Amokura"—legendary love story, and two reels of Maori arts, crafts and customs), Sport ("Anglers in Paradise" and "Deep Sea Thrills"), Miscellaneous ("Steelways of the Pacific" and four reels of "Maoriland Movielogue").

DUNLOP RUBBER CO., LTD., Fort Dunlop, Erdington, Birmingham, 24. (a) None. (b) Return postage. (c) Depends on availability of films at time request is made; generally 2-3 films are loaned at any one time. (d) One showing. (e) 2 S.: "The World Rolls On" (development of the wheel from earliest times), "Acorn to Oak" (condensed version of "Jubilee"). 3 Sd.: "Jubilee" (historical survey of invention and development of pneumatic tyre. 70 min.), "The World Rolls On," "Pioneers of Safety" (safety factors in modern times, including the pneumatic tyre).

EDUCATIONAL FILMS BUREAU, Tring, Herts. (a) Films are not loaned to individuals, unless they can give a 'particularly good reason, e.g., that they are giving special shows to educational centres.' No films are sent out until the Bureau's Application Form has been completed and are not despatched to private addresses. This form must be signed by a "Responsible Controller" (churches and affiliated organisations, the incumbent; women's institutes the president; boy scouts and girl guides, the district commissioner, etc.). A large number of 16mm. educational films are handled.

FORD FILM LIBRARY, Ford Motor Co., Ltd., Dagenham, Essex. (a) Services, evacuees, schools, clubs and similar institutions. No charge to be made for admission; if admission is charged, 75 per cent. of proceeds to be devoted to charity. (b) Return postage. (c) Three. (d) Three days; at least three weeks' notice must be given. (e) 15 S., 16 Sd. Silent subjects include "Call It a Day" (brief outline of the history of the calendar, together with flashes of what various people 'call a day'), "Measure for Measure" (2 reels. History of measurement, from the common yardstick to the Johansson gauge blocks), "Let's Tell Him" (how to acquire road sense and good driving habits), "Industrial Britain" (glimpses of some of Britain's leading trades and industries), "Your Driving Test" (film of an actual official test), "Curiosities" (odd and unusual things in the towns and villages of Britain), "Autobatics" (thrilling stunt driving). All of the above are also available in sound versions, which are about half the length of the mute films. Sound subjects also include "Oh! You Clever Boy!" (Claude Hulbert as a salesman) and "Honeymoon Trail" (a tour in London and to the North of England).

GEBESCOPE FILM LIBRARY, Tower House, Woodchester, Nr. Stroud, Glos. 1 S and 13 Sd.,

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16mm. Ensign Auto-Kinecam, f/2.8 lens... £10 10 0
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16mm. B.B. Cine Kodak Jr., f/3.5 lens ... £9 15 0
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publicity films (Tea Marketing Board, Ovaltine, Safety First, Village Settlement, etc.) available free of charge when supplied with other films chargeable at the usual rates.

HEALTH & CLEANLINESS COUNCIL (Film Dept.), Aldwych House, Aldwych, London, W.C.2. (a) None. Requests for the free loan of films will always be sympathetically considered. Any charge is usually for 35mm. films only. (b) Postage both ways. (c) By arrangement. (d) 3-4 days. (e) 16 S. 5 Sd. Silent subjects include: number of cartoons featuring Giro the Germ, "Now and Yesterday" (schoolgirl learns modern methods of house-keeping in a domestic science training centre), "Where There's Life There's 'Ope" (shows how much animals enjoy their toilet and asks: "Why not you?"), "The Climber" (about two young boys, one of whom gets on well at his job because he is clean and efficient, while the other fails because he has no respect for clean habits. 2), "Peter and the Moon Man" (a little man from the moon visits Peter's home, is shown the use of soap and water, and flies back to the moon with towels, sponges, etc., to surprise the moon folk). Sound subjects include: Giro cartoons, "Now and Yesterday" and "Silver Lining" (re-housing of a family from the slums). A new 16mm. sound film in colour, "Elfin Mount," is nearing completion. It is acted by children.

HIGH COMMISSIONER FOR S. RHODESIA, 429, Strand, London, W.C.2. (a) None. (b) Return postage. (c) As many as are available. (d) 'A reasonable time.' (c) 3 S. and Sd.: "Land of Rhodes" (2 reels), "Highlands of Rhodesia" (2), "Pioneer Trail" (2).

HORLICKS, LTD. A few publicity films, handled by the Educational Films Bureau (q.v.).

ISLE OF MAN PUBLICITY BOARD, 1 & 2, Bank Chambers, Douglas, I. of M. 2 9.5mm. S., "Where Dreams Come True" and "The Happy Isle." Available from Pathescope, Ltd. (q.v.).

KING EDWARD'S HOSPITAL FUND FOR LONDON. "The War Without End." Sd. Record of some of the wonderful achievements of medical science and of the work of our hospitals to-day. 30 min. Available through the Central Film Library (q.v.).

K.L.M. ROYAL DUTCH AIR LINES, Stratton House, Piccadilly, London, W.1. (a) None. (b) Return postage. (c) Both. (d) Not more than a week, unless by special arrangement. (e) 2 S.: "Wings Across the World" (3), "Safety First" (2).

NATIONAL INSTITUTE FOR THE BLIND, 224, Great Portland Street, London, W.1. (a) None; in event of damage, borrower must defray cost of repair. (b) Return postage. (d) Return as soon after use as possible. (e) 1 S, 2 reels, "Preventing Blindness and Saving Sight" (hazards of modern industry, examples of eye condition due to ignorance and neglect; simple animated diagrams show mechanism of eye).

NATIONAL SAVINGS COMMITTEE, Sanctuary Buildings, 20, Gt. Smith Street, Westminster, London, S.W.1. (a) May be borrowed by all Savings Committees and Savings Groups. Borrowers are asked to state size of audience when reporting on reception accorded the films. (b) Post free. (c) Not specified. (d) Up to 1 week, but longer periods are sometimes permitted for special local events such as savings drives. (e) 11 9.5mm. S., 12 16mm. S., 14 16mm. Sd. New films are added from time to time. Three groups of subjects: General (no war reference), Nature (documentary films of educational value), Films with war reference. All of the silent subjects are also available as sound films. Films include: "The Saving of Bill Blewett (Savings Group restores the independence of two Cornish fishermen. 20 min.), "Storing in the Wild" (providence of animals, birds and insects), "Growth in the Wild" (growth of plants, insects, birds and animals), "Here, There and Everywhere" (tour of England and Wales. 20 min.), "Circus" (how a savings group restored prosperity to a circus. 18 min.). Above can be obtained in 16mm. S. and Sd., and 9.5mm. (S. only). Sd. subjects include:

" Albert's Savings " (Stanley Holloway monologue), " More and More " (Cyril Fletcher recites an ' odd ode ' specially written for the War Savings Campaign).

NATIONAL TRUST. Temporary address: West Wycombe Park, Bucks. (a) 60. (b) Postage and insurance both ways. (c) 1. (d) One week, unless by special arrangement. (e) 4 S.: " Our Heritage " (colour, one of the *A.C.W.* 1939 " Ten Best "), " In Trust for You " (by Finchley A.C.S. Selection of Trust properties, 2 reels), "The Country is England " (what the Trust is doing to protect natural beauty), " This England " (colour. Selection of Trust properties).

PAPWORTH VILLAGE SETTLEMENT. 3 Sd. Two of the films illustrate how the Papworth scheme works; the casts include Madeleine Carroll, Gordon Harker, Owen Nares, Nicholas Hannen and C. Aubrey Smith. The third film, showing how a war disabled man is benefited at Enham, features Charles Laughton and Flora Robson. Distributed by Gebescope Film Library (q.v.).

PATHE PICTURES, LTD., 111, Wardour Street, London, W.1. ' (a), (b) and (d), by arrangement. (e) " The Great Crusade " (1936), Sd. A story of the national campaign to abolish slums. 16min.

PATHESCOPE, LTD., North Circular Road, London, N.W.2. (a) For owners of Pathescope projectors only. (b) Return postage. (c) As available. (d) S., 3 days. Sd., 1 day.' (e) 12 9.5mm. S. 10 9.5mm. Sd. Silent subjects given under names of firms in this list. Sound films from Australian Trade Publicity, British Commercial Gas Association, Ringtons, Ltd. and Spillers, Ltd., available from Pathescope at nominal charge of 1/- per reel. It is necessary for borrowers to give the number of their sound projector.

PETROLEUM FILMS BUREAU, 15, Hay Hill, Berkeley Square, London, W.1. (a) Schools, technical colleges, scientific societies, educational and other organisations. The term ' organisation ' is, however, given its widest meaning and includes shows in air raid shelters, A.R.P. posts, etc. (b) Return postage. (c) As many as desired. (d) Normally for a specific showing only, but this rule is relaxed when the films are to be shown to more than one audience. Maximum period: one week. (e) 6 S., 22 Sd. Short synopses of the films are available. Subjects are grouped in three classes: (1) How Oil is Produced and Refined (2), How People Use Oil, (3) How Motor Cars, etc., Work. Most of the films are produced by Arthur Elton. Silent subjects are: " A.B.C. of Oil," " The Production of Oil " (20 min.), " First Principles of Distillation," " Internal Combustion Engine: Four Stroke Cycle," " Compression Ignition Engine: Four Stroke Cycle," " Lubrication " (of the petrol engine). Sound subjects include: " Cargo for Ardrossan " (uses of oil in two highly contrasted communities: industrial Glasgow and the Island of Islay. 18 min.), "Protection of Fruit " (theory and practice of fruit-spraying to control and destroy insects and fungus. 19 min.), " Transfer of Power " (story of the transfer of power by levers from the wooden cog-wheels of water-mills to the case-hardened gears of motor cars and turbines. 22 min.), P.F.B. Cine Magazines (including " Raising Water," " Big Game Fishing," " African Airport " and " Behind the Screen "—heating and air conditioning a cinema).

R.S.P.C.A., 105, Jermyn Street, London, S.W.1. (a) None. (b) Return postage. Any help towards defraying cost of outgoing postage gratefully received. (c) No actual limit, but the Society prefers to send no more than two films at a time. (d) Return after exhibition. 15 S., including " The Flying School " (avaries where injured birds are kept to regain their powers of flight), " Our Friend the Dog" (some of the ways in which the dog renders willing service to man; hints on care and treatment of dogs), " Fowls and Geese " (lesson in poultry keeping), " Little Tiger " (history of the domestic cat from the time of the ancient Egyptians to the present day), " You and Your Rabbit," " The Life of the Frog " (shows in detail its complete evolution), " Wild Life Ways " (wild animals in National Parks of Canada).

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SOUTHERN RAILWAY, Advertising Dept., Waterloo Station, London, S.E.1. (a) Films are at present loaned only to schools, societies, etc., on this company's system. (b) Borrower makes arrangements for collection and delivery to the local station. (c) No limit. (d) Return day following that of exhibition. (e) S. Subjects include: "Purley to Victoria" (from driver's cab of electric train), "Southern Seaside," "Holiday Preview" (Jersey. 36 min.), "Building an Electric Coach" (50 min.). One 9.5mm. S.: "Bournemouth."

SPILLERS, LTD., N.P. Dept., Roath Dock, Cardiff. "Trust Peggy" (super-intelligence of a dog). 9.5mm. S. (free) and 17.5mm. Sd. (1/-). Available from Pathescope, Ltd. (q.v.).

ST. PANCRAS HOUSE IMPROVEMENT SOCIETY, LTD., 140, Eversholt Street, Euston, N.W.1. (a) None. (b) A small donation to cover the cost of packing and postage. (c) Both, if available. (d) 1-2 weeks. (e) 2 S.: "Challenge" (The war on the slums of Somers Town. The challenge of the slums answered by the Church. 4), "The Terror that Walks by Night" (film by an amateur designed to break down the taboo on an unpleasant subject: the bed bug. "Disagreeably instructive"—*New Statesman*).

TIMBER DEVELOPMENT ASSOCN., LTD., 75, Cannon Street, London, E.C.4. (a) None. (b) Return postage. (c) Depends on number of films available at time. (d) 3-4 days. (e) 4 S.: "The Story of Timber" (from forest to sawmill—felling in forests in various parts of the world—methods of haulage—uses of timber, including shots of process of paper manufacture. 2), "Work of the Forestry Commission" (cultivating land for afforestation, from preparing the seed to the young forest 15 years later, ways in which local industry can be helped by a growing forest), "Lumbering in British Columbia," "Timber" (survey of some of the activities of the timber industry). 1 Sd.: "Forest Treasures."

UNION OF SOUTH AFRICA. Publicity and Travel Bureau, South Africa House, Trafalgar Square, London, W.C.2. (a) Films may be borrowed by educational or other approved societies, by lecturers and for showing to Service camps in U.K. (b) Return postage. (c) Three. (d) Specified dates. (e) 4 S., 13 Sd. Silent subjects: "Animals in Wonderland" (Kruger National Game Reserve), "Cape Flora" (colour), "On Tour in S. Africa" (7 reels), "Tavern of the Ocean" (tour by road of Cape Peninsula. 3 reels). Sound subjects include: "In the Land of the Red Blanket" (customs and habits of native tribes in Transkei territory, 535 ft.), "The Marriage Ceremony of the Amalzulu" (595 ft), "The Swazi People" (345 ft.), "Mountain Waters" (678 ft.), "On Tour in S. Africa" (1,965 ft.). Four 'tone poems' are also available: "The Day Awakens" (beauty and characters of S. Africa set to music), "Moods in the Forest" (both of the above with background of music but no commentary), "The Sea" and "World's Greatest Wild Life Sanctuary" (3 reels).

UNIVERSITIES FEDERATION FOR ANIMAL WELFARE, 284, Regent's Park Road, Finchley, N.3. (a) None, but when the films are returned the Federation requests that a note be sent of the number of people who see each film. (b) Registered post both ways. (c) As many as are available (d) Return after exhibition, but on occasion films can be retained longer by special arrangement. (e) 12 S., including: "Ann's Dog" (correct care of a dog), "Betty's Rabbit" (how to look after, feed and house rabbits. 30 min.), "Hunting Without a Gun" (shooting animals with a camera), "Stalking Big Game," "Life Story of the Tawny Owl," "The Beaver People," "The Home of the Buffalo."

A. WANDER, LTD., Publicity Dept., 184, Queen's Gate, London, S.W.7. 9.5mm. S., "The Home of Good Health" (story of Ovaltine). Available from Pathescope, Ltd. (q.v.).

Cine Societies Carry On

Encouraging reports of progress have been sent us by the following societies, but we regret that, owing to pressure on space, we are unable to publish them here. We shall, however, be glad to send names and addresses of the hon. secretaries to any readers wishing to make contact with these clubs :

Apex A.C.C., Armley C.S., Beckenham C.S., Birmingham P.S. (Cine Section), Bradford Cine Circle, Cambridge University F.S., Charlton A.C.S., Edinburgh C.S., Fulmar Films, Hyde C.S., Newport and District A.F.S., Redditch Cine and Photographic Club and United Film Productions.

The Federation of Cinematograph Societies announces a full list of film library bookings up to April, 1942. The I.A.C. is to revive its annual competition next year ; provisional closing date is March 31st, 1942. It also proposes to start a register of members films and a production unit.

BOOKS FOR CHRISTMAS

The selection of seasonable gifts is likely to present some difficulty this Xmas, what with Quotas, coupons and Purchase Tax. But books are subject to none of these things, and make presents of definite and lasting value. For the cine enthusiast there is Strasser's " Ideas for Short Films " (2/6), which Andrew Buchanan has described as " a most valuable book which should teach the student a great deal about the skilled art of creating imaginative ' shorts.' "

Other important books in the *A.C. W.* series are Smethurst's " Exposing Cine Film " (2/-), the manual of the famous High-Light system, " Cine Titling Simplified," by Harold B. Abbott (2/-), " Trick Effects with a Cine Camera," by H. A. V. Bulleid (2/-) and " Professional Quality on Amateur Reversal Film " (5/-), Smethurst's latest work on cine film exposure. Most bookshops and photographic dealers can supply these books, or they can be obtained direct from the *A.C. W.* Book Dept., postage being extra (2d. on 2/- and 2/6 books, and 6d. on the 5/- book).

RUSSIAN FILMS

The Workers' Film Association are undertaking the 16mm. distribution of the Soviet War News Film Agency's sound films of the Russian scene, the most recent addition being the much-discussed " U.S.S.R. for Victory," in which Stalin makes his famous " scorched-earth " appeal to the Russian people. The W.F.A. are offering Labour organisations a full week of film shows, with as many shows each day as they can organise, for 18 gns. Details of hire can be obtained from the Secretary-Manager, W.F.A., Transport House, Smith Square, London, S.W.1.

IS YOUR PROJECTOR IN USE ?

Owners of 16mm. projectors (particularly sound machines) who would be willing to lend or present them to military units who have no funds available and are without any means of recreation, are asked to communicate with Wallace Heaton, Ltd., 127, New Bond Street, London, W.1, who will handle the matter entirely without profit to themselves and are prepared to defray minor expenses.

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Rates : For private adverts. 3d. per word (minimum 3/6) ; for Trade advertisements 6d. per word (minimum 6/-). Box Number 6d. extra. All advertisements must be prepaid. The latest date for receiving small advertisements for the March issue is February 3rd.

WANTED

Back numbers "Amateur Cine World," "Home Movies," wanted, prior January, 1939. American movie magazines, any date, any books interest amateur movie maker. Also "Sandell" Rear Focusser for Bolex H8. Private buyer. Box 578, c/o "Amateur Cine World," 324, Gray's Inn Road, London, W.C.1.

Wanted for educational purposes 16mm. Kodachrome on 50 ft. or 100 ft. reels. Reasonably out of date stock considered. Particulars to Vernon Howe, Y.M.C.A.-Y.W.C.A., Youth Centre, Corbett Street, Smethwick, Staffs.

Wanted two 16mm. projector or camera mechanisms, also 16mm. camera good condition, no lens, standard threads ; 35mm. camera one lens same ; 35mm. projector mechanism. Sands, 57, Sandyhill Road, Shirley, Birmingham.

Wanted Twin-turntables, electric, 200/250v. with matched pickups, mixer ; also 8mm. films. State price and if sent on approval against cash. Dennis, 12, Trap Lane, Sheffield, 11.

Wanted. Films 9.5 or 16mm. silent Switzerland, N. Italy. Price and particulars Box 577, c/o "Amateur Cine World," 324, Gray's Inn Road, London, W.C.1.

Wanted. Bolex Talkie complete. Private buyer. Exchange Bolex G916 and cash. 'Phone 4614. Peacock, Stonehaven, Brompton Avenue, Colwyn Bay.

The fact that goods made of raw materials in short supply owing to war conditions are advertised in this magazine should not be taken as an indication that they are necessarily available for export.

Wanted. Lens for 200B, also S. B. 30034, "The Informer." For sale. S.B. 771, S.B. 20058, S.B. 40183, 13/- per reel. 23, Osborne Road, Belvedere, Kent.

Wanted urgently for educational production group. Developing drum 16mm. Film stock 50, 100ft. 16mm. Set Wratten or Ilford pan filters, spring flange 1¾". Thalhamer or similar tripod ; pan and tilt-head. Harrison, East View, Maybole, Ayrshire.

Pathe Vox, exchange 9.5mm. outfit, cash adjustment, see "For Sale," Donnelly, English Street, Armagh, Ulster.

FOR SALE

16mm Movie Medley. Screen magazine, silent. 310 ft. New copies. Price £3 10 0. Smith, Coniston, Four Marks, Alton, Hants.

Pathescope Lux Motocamera f/3.5, £3, SB/667 "Michael Strogoff," 3 reels, £3 ; 400 ft. Kodagraph "Britain To-day," £2 10 0. All perfect. 321, Kingsway, Dundee.

Kodak Magazine Camera 16mm., 1.9 lens and case, hardly used. Price £35 0 0. No tax. Apply : 12, Queensberry Road, Kettering.

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Pathe Lux Projection Lens, 70mm., £1 10 0 ; 9.5mm. Pathescope Lux Motocamera f/3.5. with case, £4 10 0. Super reels SB728, S639, S684, will not separate. £1 10 0. Ide, Hustler Road, Bridlington.

Exchange Bolex DA. 9/16 Projector, case, new condition, for 16mm. Feature Sound Films. Cash adjustment either way. Few shorts 16mm. Sound for sale. Barlow, Beebee Road, Wednesbury.

"Amprosound," 750 w. lamp, 10w. output, 1,600ft. capacity, list £165, £95. Screen, gramophone, microphone, other cine equipment. List free. Roberts, 3, First Right-of-Way, Hatfield, Herts.

"Specto" 9.5mm. projector, latest model, new, used twice, instructions. 9.5mm. Ditmar camera optical meter, f/1.8 focussing, speeds, leather case, new condition, instructions. Offers. Would exchange for Pathe Vox, cash adjustment, particulars, Donnelly, English Street, Armagh, Ulster.

16mm. Kodascope Model "C" 100 watt, Bronze, clorostat fitted, resistance in perfect condition. New spare lamp, film spool, instruction book: £10 or near offer. Tolley, Crossways, Ash Vale, Aldershot.

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"Love from a Stranger"—ten reel 16mm. programme including variety short—week-end hire 47/6—Balmforth Films, Rydal Mount, Ruff Lane, Ormskirk, Lancashire.

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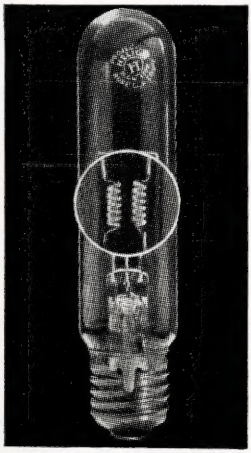

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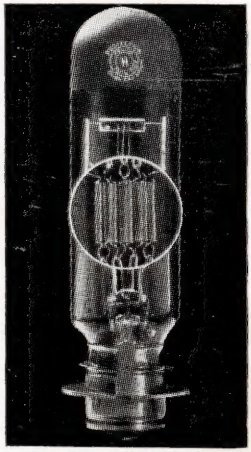

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